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Leuven Language Institute (ILT)

Today's session: Objectives

- ▶ Guidelines to improve academic writing skills
- ▶ Strategies to help you write your thesis
 - ▶ Structure, style and language of research papers

→ Slides to be made available online



Writing challenges



- ▶ Do you recognise some of these problems?
 - ▶ Staring at a blank screen, struggling to get something on paper
 - ▶ Start with an outline and key words → build on that
 - ▶ Don't start with introduction → write when body is more or less finished
 - ▶ Getting stuck on one sentence / paragraph, trying to make it perfect
 - ▶ Keep going and remember it's just a first draft → rework later
 - ▶ No trouble transferring your ideas to the page, but disappointing feedback / response
 - ▶ Having written a full text doesn't mean you're done
 - ▶ Leave sufficient time to edit your text and be prepared to thoroughly reorganise your work



Writer attitudes



Getting the assignment done

- ▶ Meeting the word count
- ▶ Not missing the deadline
- ▶ Good enough to get a pass



Writing as communication → be reader-oriented

Writing as a process → be prepared to invest time and effort



planning



writing



editing



Writing as a process

- ▶ Have a critical look at your writing process:
 - ▶ What kind of writer are you?
 - ▶ Which strategy works best for you?
- ▶ Divide a complex writing assignment into more manageable steps
 - ▶ Make a schematic overview (key words) → easier to get started
 - ▶ Use this to build sentences and paragraphs step by step
- ▶ Be prepared to write and rewrite
 - ▶ Don't get stuck trying to get everything perfect right away
 - ▶ Move on and rework what you had trouble with later
 - ▶ Accept that your first draft might still require thorough revisions



Improving academic writing skills

= Long-term process, continuous effort



Key principles, strategies (rather than quick fixes)

- | | |
|--|---|
| 1. Learning from examples <ul style="list-style-type: none"> • Vocabulary acquisition • Genre analysis | 4. Using a step-by-step approach <ul style="list-style-type: none"> • Considering task requirements • Planning, writing and editing |
| 2. Respecting genre conventions <ul style="list-style-type: none"> • Formal style • Depersonalised writing | 5. Being reader-oriented <ul style="list-style-type: none"> • Considering expectations • Clear and coherent message |
| 3. Using tools and resources <ul style="list-style-type: none"> • Useful websites | |



Slides: Guidelines, examples, strategies

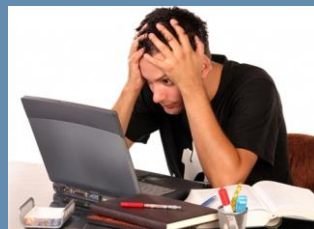
Overview:

- ▶ **Planning your text**
 - ▶ Genre analysis
 - ▶ Macrostructure
- ▶ **Writing your text**
 - ▶ Language and style tips
 - ▶ Useful online tools
- ▶ **Editing your text**
 - ▶ Improving coherence and flow
 - ▶ Common language errors



Before you start writing...

- ▶ Understand what is expected
 - ▶ Task, genre, audience
- ▶ Useful strategies:
 - ▶ Analyse well-written examples
 - ▶ Genre characteristics
 - ▶ Language, structure and style
 - ▶ Plan your text (content and structure)
 - ▶ Helpful step in writing process
 - ▶ Select information and organise your ideas



Analysis of good examples



Genre conventions

- ▶ Scientific writing
 - ▶ Not just correct grammar and word choice
 - ▶ Specific genre requirements
- ▶ Analyse well-written examples
 - ▶ To identify relevant structural, stylistic and language features
 - ▶ Useful strategy to improve the quality of your writing
 - ▶ Other examples: CV, application letter, executive summary, press release, business report



Analysis of good examples



Vocabulary learning

- ▶ Identify useful topic-specific vocabulary
 - ▶ Consult scientific papers from the same field
 - ▶ Highlight useful language items and **words they combine with**

= useful learning strategy

**! Do not copy longer chunks or full sentences
= plagiarism !**



Collocational patterns

Collocation = set of words that often occur together in a specific language

e.g. *to substantiate a hypothesis, body of research*
~~*play a large impact, know a decline*~~
poisonous vs. toxic
(poisonous snake - ~~toxic snake~~)

→ More natural, idiomatic language



Field-specific resources: collocations

Model-Driven Engineering (MDE) promotes models as the primary artefacts in the software development process, from which code is derived for the final application. Standard approaches to MDE advocate a two-level metamodeling setting where Domain-Specific Modelling Languages (DSMLs) are defined through a metamodel that is instantiated to build models at the metalevel below. Multilevel modelling extends the standard approach to metamodeling by enabling modelling at an arbitrary number of metalevels, not necessarily two. Proposers of multilevel modelling claim this leads to simpler model descriptions in some situations, although its applicability has been scarcely evaluated. Thus, practitioners may find it difficult to discern when to use it and how to implement multilevel solutions in practice. In this article, we discuss those situations where the use of multilevel modelling is beneficial, and identify recurring patterns and idioms. Moreover, in order to assess how often the identified patterns arise in practice, we have analysed a wide range of existing two-level DSMLs from different sources and domains, to detect when their elements could be rearranged in more than two metalevels. The results show this scenario is not uncommon with a high average number of pattern occurrences per metamodel.



Topic-specific collocations

Field-specific resources: collocations

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► **General academic collocations**

Field-specific resources: collocations

Entropy is a fundamental **thermodynamic property** that has attracted attention across domains. Inference of entropy of **chemical compounds** using various approaches has been a widely studied topic. However, many aspects of entropy in chemical compounds remain unexplained. The present work proposes two new information-theoretical **molecular descriptors** for the prediction of **gas phase thermal entropy of organic compounds**. The descriptors reflect the bulk and size of the compounds as well as the gross topological symmetry in their structures, all of which are believed to determine entropy. A high correlation between the entropy values and information-theoretical indices has been found and the **predicted entropy values**, obtained from the corresponding statistically significant **regression model**, have been found to be within acceptable approximation. We provide additional mathematical results in the form of a theorem and proof that might further help in assessing changes in gas phase thermal entropy values with the changes in molecular structures. The proposed information-theoretical molecular descriptors, regression model and mathematical results are expected to improve predictions of gas phase thermal entropy for a large number of chemical compounds.

► **Topic-specific collocations**

Field-specific resources: collocations

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► **General academic collocations**

Planning your text

- Which information to include...
- How ideas relate... (logical links)
- How to order them...



Establishing your focus

- ▶ **Research questions, objectives, hypotheses**

- ▶ What? → research focus
- ▶ Why? → scientific relevance
- ▶ How? → theoretical framework, methods

Preliminary? → expect to finetune as you complete your research



Organising your ideas

- ▶ **Select information carefully**
- ▶ **Make a schematic overview to organise your ideas**
 - ▶ Tree structure / mind map
 - ▶ Q&A approach (questions → answers)
 - ▶ Outline (bullet points, key words)
- ▶ **Construct coherent paragraphs**
 - ▶ Clear focus (topic sentence)
 - ▶ Logically organised
 - ▶ Use of headings and sections (especially longer texts)



Analysis of good examples

- ▶ Identify key structural elements in a specific genre
 - ▶ Abstracts
 - ▶ Research papers
 - ▶ Literature reviews
 - ▶ Research proposals
 - ▶ Executive summaries



Introduction (problem > objective) – Methods – Results – Conclusion

The optimal design of rotational production processes for glass wool manufacturing **poses** severe computational **challenges** to mathematicians and engineers. **This paper focuses on** the spinning regime where thousands of viscous thermal glass jets are formed by fast air streams. Homogeneity and slenderness of the spun fibers are the quality features of the final fabric. Their prediction **requires** the computation of the fluid-fiber-interactions, **which involves** the solving of a complex three-dimensional multiphase problem with appropriate interface conditions. **However**, this is **practically impossible** due to the high resolution and adaptive grid refinement. **Therefore**, an asymptotic coupling concept **is proposed**. A weak iterative coupling algorithm that is based on the combination of commercial software and self-implemented code **makes** the simulation of the industrial process **possible**. Consequently, this work **establishes a promising basis** for future optimization strategies.

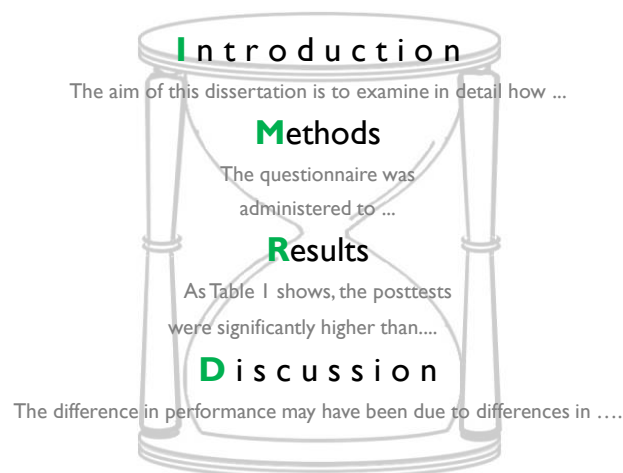


Introduction (relevance > objective) – Methods – Results – Conclusion

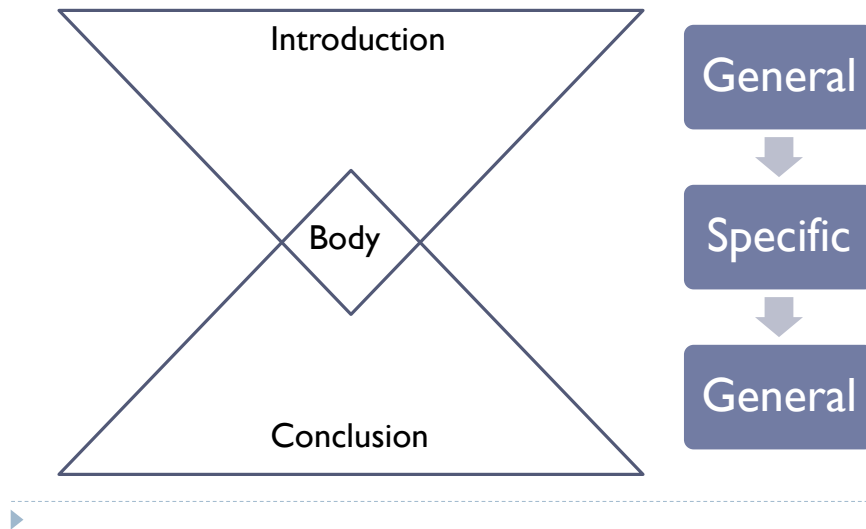
Different environmental processes utilize calcium carbonate and sedimentary rocks. For instance, sedimentary rocks are used as filters for water purification, and in another **very important** environmental process, wet Flue Gas Desulfurization. In this process, limestone and carbonates **play an important role** because of their dissolution and provision of the necessary amount of calcium ions used for the precipitation of gypsum. **The objective of this study is** to present an overview of specific theoretical and empirical mathematical models applied to the dissolution of carbonates in acidic environments with provision of additional developments and details. **A case study was conducted** where suitable time of exposure and surface diffusivity **was analysed** by different methods. The related mathematical modeling **was performed** considering transient conditions. Diverse raw materials **were tested** in order to reveal their suitability for wet Flue Gas Desulfurization. The research **was focused** on products from fixation processes materials as well as other types of limestone samples. **In this way, it was found that** waste materials from different environmental processes, like fixation, **can also be used for** Flue Gas Desulfurization.



IMRaD structure



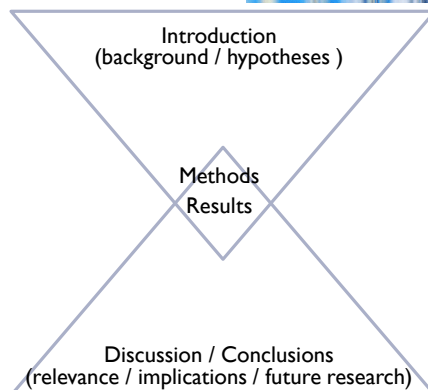
Scientific texts: Structure



Scientific texts: Structure

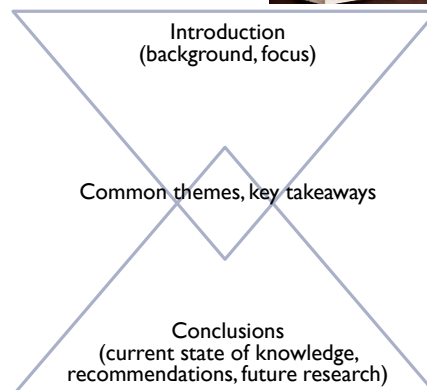
Describing your own research

e.g. abstract
research paper



Summarizing existing studies

e.g. executive summary
literature review



Catheter and vessel shape estimation for guidance of robotic catheters in endovascular surgery

Introduction / Objective

Endovascular surgery is a minimally-invasive procedure in which catheters are navigated through the patient's blood vessels. It is a complex intervention because of the poor feedback provided by damaging 2D X-ray imaging and the limited maneuverability of conventional flexible catheters. This complexity may lead to critical events, such as vessel perforation or embolization of calcified plaques due to acute contact between the catheter tip and the vessel wall. Robotic catheters with embedded sensors and actuators have been developed to enhance the surgeon's ergonomics and catheter maneuverability. They however still provide limited situational awareness. This prevents the surgeon to fully exploit the capabilities of robotic systems to reduce the occurrence of adverse events during surgery. This thesis aims to use non-damaging sensors embedded in robotic catheters to increase situational awareness. In particular, the thesis investigates, develops and evaluates *in silico* and *in vitro* probabilistic methods to estimate the catheter and vessel shape for intra-operative guidance.

Research Methodology

A **virtual reality simulator** is first developed to simulate the navigation of robotic catheters with X-ray imaging and embedded sensing. This provides a configurable environment where new algorithms can be consistently validated with reliable ground-truths.

Reconstruction of the catheter 3D shape is achieved with a dedicated probabilistic model using non-damaging electromagnetic (EM) sensors embedded in the catheter. X-ray imaging is incorporated as needed to cope with EM disturbances that affect the EM sensors. The probabilistic model is evaluated *in silico* and *in vitro*.

The **vessel shape is locally approximated by a cylinder model** in the vicinity of the catheter shape. The cylinder parameters are estimated intra-operatively using recursive Bayesian filtering on data provided by EM sensing and intravascular ultrasound (IVUS) imaging. The approach is evaluated *in silico* and *in vitro*.

Results & Conclusions

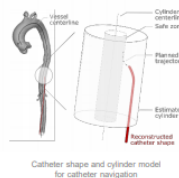
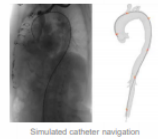
Experiments *in silico* and *in vitro* demonstrated that

- the reconstructed catheter shape is improved when incorporating X-ray measurements to EM data;
- the cylinder model accurately approximates the local vessel shape;
- the cylinder parameters can be accurately estimated, except for its orientation that may require a certain amount of active probing.

Catheter shape and local vessel geometry are the building blocks that were developed in this thesis to increase the intra-operative situational awareness. With such awareness, surgeons may worry less on where the catheter is and on how to steer it. They can better focus on what to do to prevent acute contact between the catheter tip and the vessel wall.

Major publication

Tan P. T., Chang P., De Praetere H., Maes J., Reynaerts D., Vander Sloten J., Stoyanov D., Vander Poorten E. (2017). 3D Catheter Shape Reconstruction Using Electromagnetic and Image Sensors. *Journal of Medical Robotics Research*, 2 (3), 1-12.



Source:

Faculty of Engineering Science:
PhDs defended in 2018

Does the osteocyte lacuna affect bone adaptive response in aging?

Introduction / Objective

Osteoporosis is a bone disease associated with aging. It is defined by low bone mass and compromised bone strength, leading to increased risk of fractures. Osteoporosis results from sex hormone deficiency as well as reduced mobility with aging, leading to a negative balance in the bone remodeling process. Bone remodeling is controlled by mechanosensitive osteocytes that reside in lacunae. It has been shown that the shape of osteocytes and their lacunae vary with aging and in different bone diseases. However, it remains unknown whether changes in lacunar morphology can really underlie the altered bone mechanoresponsiveness and whether this is (one of) the pathways involved in age-related bone loss. Therefore, the focus of this thesis was on the role of osteocyte lacunar shape on the bone mechano-biological response.

Research Methodology

In order to reach this aim, we investigated potential age-related variations in the morphology of the osteocyte lacunar network in fibulae of young and old mice using high-resolution desktop micro-computed tomography (μ CT). We related lacunar shape to microscopic bone strains using μ CT image-based micro-finite element (μ FEM) modeling. In order to investigate whether lacunar morphology affects the osteocyte mechanoresponse we studied the response of osteocytes to mechanical loading in mechanically loaded fibula of two groups of mice having different lacunar morphology by quantification of loading-related changes in sclerostin and β -catenin expression in osteocytes, as determined using immunohistochemistry.

Results & Conclusions

With aging the shape of the osteocyte lacunae changes from elongated towards round; in addition, the lacunae reduce in size. A direct mechanical consequence is that local strain concentrations in the bone tissue around the lacunae will reduce in magnitude. Hence, osteocytes located in smaller and more round lacunae in aged bones will experience lower local tissue strains than those in larger and thinner lacunae in young bones. Due to the reduced tissue strains, the osteocytes respond with a loading-induced reduction in β -catenin expression and an increased expression of sclerostin, even if the mechanical loading remains the same. The reduction of β -catenin expression leads to a reduction in bone formation; at the same time, the increase in sclerostin expression limits bone formation too, because of its anabolic effect. This causes an imbalance in the bone remodeling process with a net loss of bone resulting in osteoporosis.

Major publication

H. Hemmatian, A.D. Bakker, J. Klein-Nuland, and G.H. van Lenthe (2017). Aging, osteocytes, and mechanotransduction, *Current Osteoporosis Reports* 15 (3): 401-411.
H. Hemmatian, M.R. Laurent, S. Ghazanzadeh, D. Vanderschueren, A.D. Bakker, J. Klein-Nuland, G.H. van Lenthe (2017). Accuracy and reproducibility of mouse cortical bone microporosity as quantified by desktop microcomputed tomography, *PLoS ONE*, 2017; 12(8): e0182998.

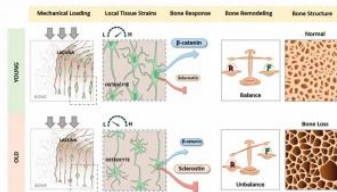


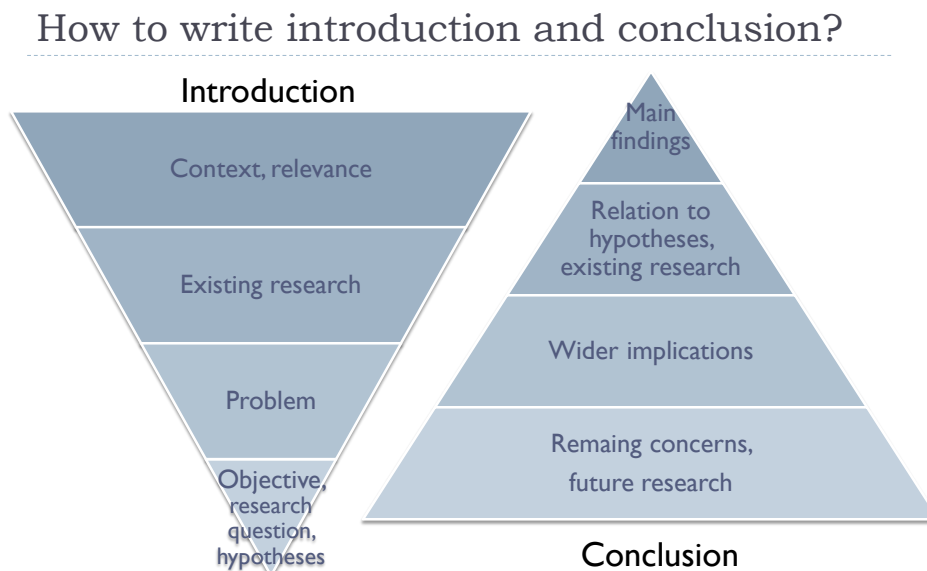
Figure 1. Proposed model explaining how changes in the morphology of osteocyte lacuna as seen with aging may cause bone age-related bone loss resulting in osteoporosis. L: low strains; H: high strains; F: bone formation; R: bone resorption; \uparrow : stimulation; \downarrow : inhibition.

Source:

Faculty of Engineering Science:
PhDs defended in 2018

How to write introduction and conclusion?

- ▶ Introduction \neq first part to write
 - ▶ Introduction and conclusion most important / challenging sections to write
 - ▶ Best written when done with corpus
 - ▶ Literature review
 - ▶ Methods
 - ▶ Results
 - ▶ Introduction \neq abstract \neq table of contents
- What to include in introduction / conclusion?



Does the osteocyte lacuna affect bone adaptive response in aging?

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To investigate whether lacunar morphology affects the osteocyte mechanoresponse we studied the response of osteocytes to mechanical loading in mechanically loaded tibiae of two groups of mice having different lacunar morphology by quantification of loading-related changes in sclerostin and β -catenin expression in osteocytes, as determined using immunohistochemistry.

Results & Conclusions

With aging the shape of the osteocyte lacunae changes from elongated towards round; in addition, the lacunae reduce in size. A direct mechanical consequence is that local strain concentrations in the bone tissue around the lacunae will reduce in magnitude. Hence, osteocytes located in smaller and more round lacunae in aged bones will experience lower local tissue strains than those in larger and thinner lacunae in young bones. Due to the reduced tissue strains, the osteocytes respond with a loading-induced reduction in β -catenin expression and an increased expression of sclerostin, even if the mechanical loading remains the same. The reduction of β -catenin expression leads to a reduction in bone formation; at the same time, the increase in sclerostin expression limits bone formation too, because of its anti-anabolic effect. This causes an imbalance in the bone remodeling process with a net loss of bone resulting in osteoporosis.

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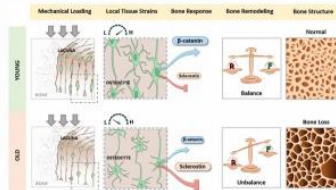


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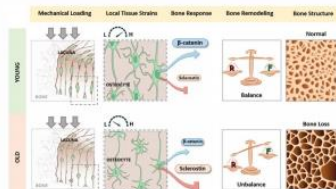


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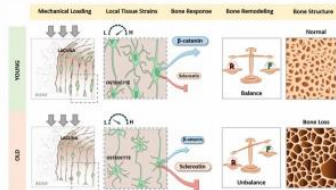


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Source:

Faculty of Engineering Science:
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MA thesis: Complete overview

- ▶ Title
- ▶ Abstract
- ▶ Table of contents
- ▶ Lists
- ▶ Corpus:
 - ▶ Introduction
 - ▶ Literature review
 - ▶ Methods
 - ▶ Results
 - ▶ Discussion
 - ▶ Conclusions
- ▶ References
- ▶ Appendices

Not written in this order:

- Methods often easiest to describe
→ Can be good way to get started
- Introduction / conclusion / abstract
→ Best written last

Non-textual elements

- ▶ **Table of contents**
 - ▶ Best compiled when completely finished
 - ▶ Try to formulate titles according to the same format (parallelism)
 - ▶ Avoid too many sublevels / too much indentation
 - ▶ Check that no sections are missing
- ▶ **Lists**
 - ▶ Tabela, figures, graphs, symbols, abbreviations
- ▶ **Appendices**
 - ▶ Essential information that would make the text too heavy
- ▶ **References**
 - ▶ Be consistent



Abstracts

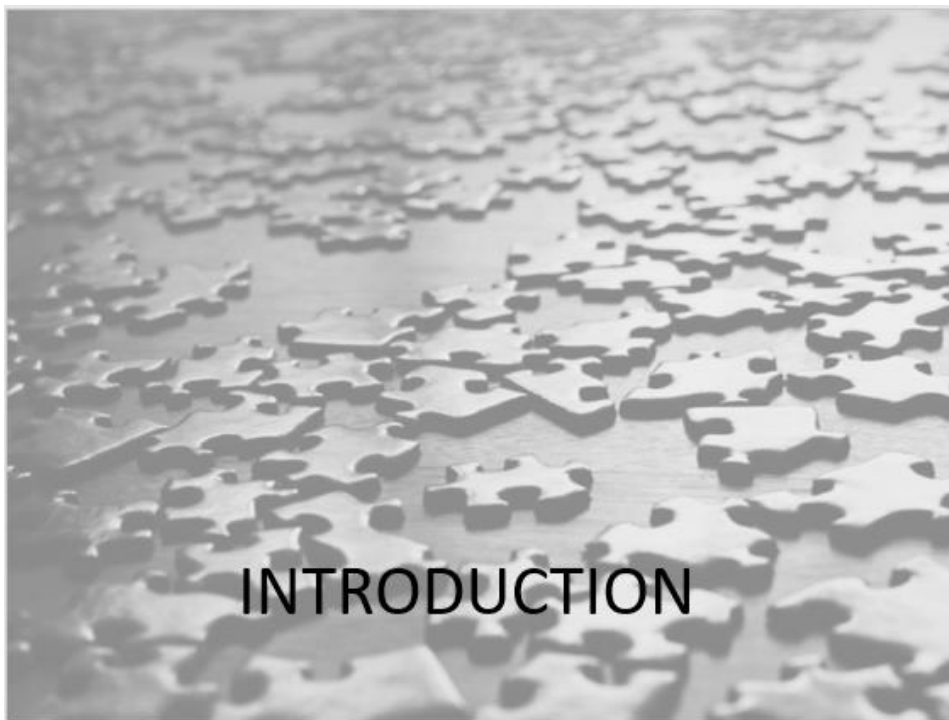
- ▶ Short version of paper/thesis
 - ▶ ≠ an introduction
 - ▶ More focus on results and implications
- ▶ All/some of the following stages (sometimes clearly labelled)
 - ▶ Background (research gap)
 - ▶ Objectives
 - ▶ Methods
 - ▶ Results
 - ▶ Conclusions



Abstracts

- ▶ Should function as stand-alone text
 - ▶ No references to tables/figures
 - ▶ Clear and accessible language
- ▶ To be made available in LIMO





Introduction

- ▶ Relevant context and essential concepts
 - ▶ Importance of topic
 - ▶ Link with previous studies / the field in general
 - ▶ Problems / challenges / limitations of existing research

Entropy is a **fundamental** thermodynamic property that has **attracted attention** across domains. Inference of entropy of chemical compounds using various approaches has been **a widely studied topic**. **However**, many aspects of entropy in chemical compounds **remain unexplained**.

Organic thin-film transistors are **considered indispensable** in applications requiring flexibility, low processing temperature, and low cost. **Key challenges to be addressed** include developing solution-processable gate dielectric materials that form uniform films over large areas.

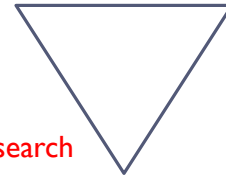
Methods used previously to deposit materials within the pores of such membranes include electrochemical deposition and in situ polymerization. This paper describes **the first use of** sol-gel chemistry to prepare semiconductor nanofibrils and tubules within the pores of an alumina template membrane.

Gradisar et al. recently presented a novel self-assembly strategy for polypeptide nanostructure design that could lead to **significant developments** in biotechnology. In the present paper, the underlying mathematical model is developed.



Introduction

- ▶ Relevant context and essential concepts
 - ▶ Importance of topic
 - ▶ Link with previous studies / the field in general
 - ▶ Problems / challenges / limitations of existing research
- ▶ Objectives / hypotheses



However, this is practically impossible due to the high resolution and adaptive grid refinement.
Therefore, this paper proposes an asymptotic coupling concept.

The objective of this study is to present specific theoretical and empirical mathematical models applied to the dissolution of carbonates in acidic environments.



LITERATURE REVIEW



Literature review

- ▶ Provides an overview of the literature available
 - ▶ Gives the reader an idea of the current “state of knowledge”
- ▶ Shows how your work fits in with earlier studies and the field in general
 - ▶ Shows that there is a need for your research
- ▶ Offers a better understanding of your research questions and hypotheses
 - ▶ Serves as a basis for methodology
 - ▶ Gives an indication of results to expect



Literature review

- ▶ Summarising work done by others
 - ↔ challenging to write
 - ▶ Searching > reading > selecting > planning > writing
- ▶ Not just a list of studies (avoid summarizing articles one by one)
 - make your own contribution
 - ▶ Selection of sources (establishing focus)
 - ▶ Structure (organising information and establishing connections)
 - ▶ Evaluation (identifying strengths and weaknesses)



Literature review

- ▶ Do not simply follow the structure of the original sources
- ▶ Organise information **thematically**
 - ▶ Group different sources around common ideas and make connections
e.g. different aspects, causes, hypotheses, arguments
 - shows you understand how the studies relate and have made the information your own
- ▶ **Chronological** organisation often less effective
 - unless describing evolution of approach or methodology



Literature review

- ▶ Carefully select information
 - ▶ Which sources are influential within the field?
 - ▶ What are the key ideas within each source?
 - ▶ Which key ideas are most relevant for your purposes?
- ▶ Identify common patterns, themes
 - ▶ Write well-constructed paragraphs
 - ▶ avoid short (1-sentence) paragraphs
 - ▶ group different sources around common ideas
 - ▶ write clear topic sentences to identify the main themes
 - ▶ Within paragraphs, highlight connections
 - ▶ between different studies
 - ▶ with your own work
 - ▶ areas for further research





METHODS

Methods

- ▶ Describe methodology, materials, procedures
 - ▶ Can be written first (less challenging)
- ▶ Varying degree of specificity (field-dependent)
 - ▶ Standardised methods: brief reference sufficient
 - ▶ Original approach: explicit, step-by-step description and justification

*Epitopes **were selected** from sequences at both C- and N-termini based on the three-dimensional structure of the T3 peptide. The assay **was simplified** by attaching magnetic beads to the anti-T3 antibody.*



Annual trends were determined by entering education level, age, and the year of survey as independent variables into the logistic regression and general linear models, with smoking status and quantity of cigarettes consumed as dependent variables, respectively. The regression coefficient and standard error of the year of survey term were used to calculate the slope estimate. The slope estimate was considered statistically significant if the 95% confidence interval surrounding it excluded zero. An interaction term was entered into these models and the type III sums of squares were used to evaluate whether trends differed by education group.

In the combined country analyses, current smoking rates and quantity of cigarettes consumed were calculated for each education group. These rates were age adjusted according to the direct method, using the age distribution of the European population as the standard. All further analyses were adjusted for age, which was entered as a continuous covariate into the models. Differences in smoking prevalence or cigarette consumption between education groups were determined by the Tukey test.

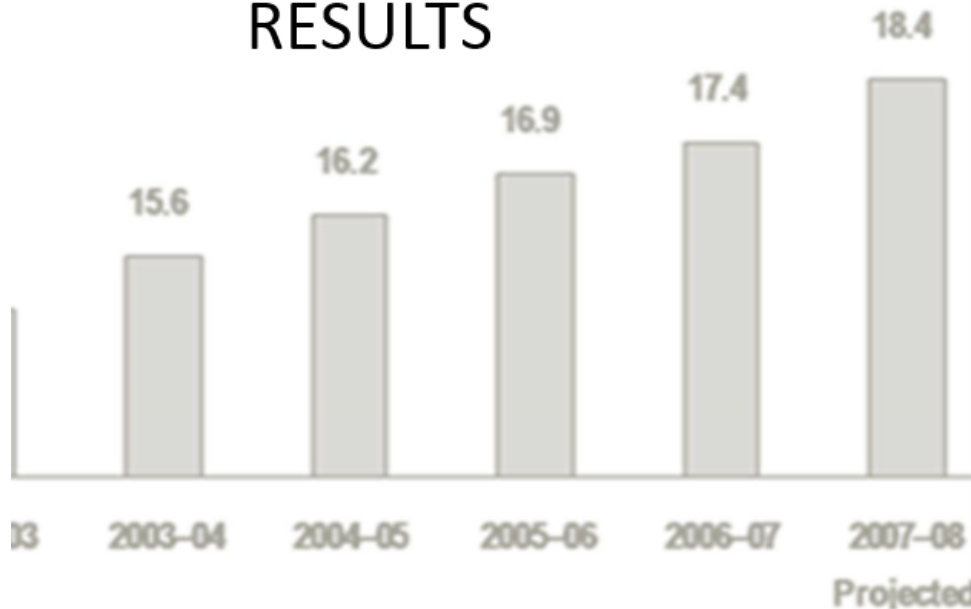
Standardised methods

Mean monthly climatic data (precipitation, relative humidity, and environmental temperature) were obtained using the Meteotest Meteonorm V.4.0 CD ROM, a meteorological computer program that contains reliable 30 year averages for several hundred weather stations globally. Weather stations were selected carefully on the basis that they were most climatically representative of a given country with regard to respective population dispersals. After extensive discussions with meteorologists, the weather stations used were often those found in a country's capital city, as these captured, for most cases, the largest share of the country's population. However, for those countries with particularly dispersed populations and discernible climatic variations (Italy, France), a north-south gradient was used, that is, the average of two weather stations – each climatically representative and with high population densities – was used.

Longitudinal datasets on macroeconomic indicators were obtained from the United Nations Statistics Division and the World Bank. Time series datasets were also obtained from the World Bank regarding lifestyle risk factors such as smoking and obesity, and on health service provision. Data on four socioeconomic variables were calculated using the European Community Household Panel longitudinal users' database covering the four years 1994–97; this survey is the first comparable, cross country database on social indicators in the EU. As it only started in 1994, there are no cross country data available in Europe regarding such socioeconomic indicators prior to this year.

Methods + justification

RESULTS



Results

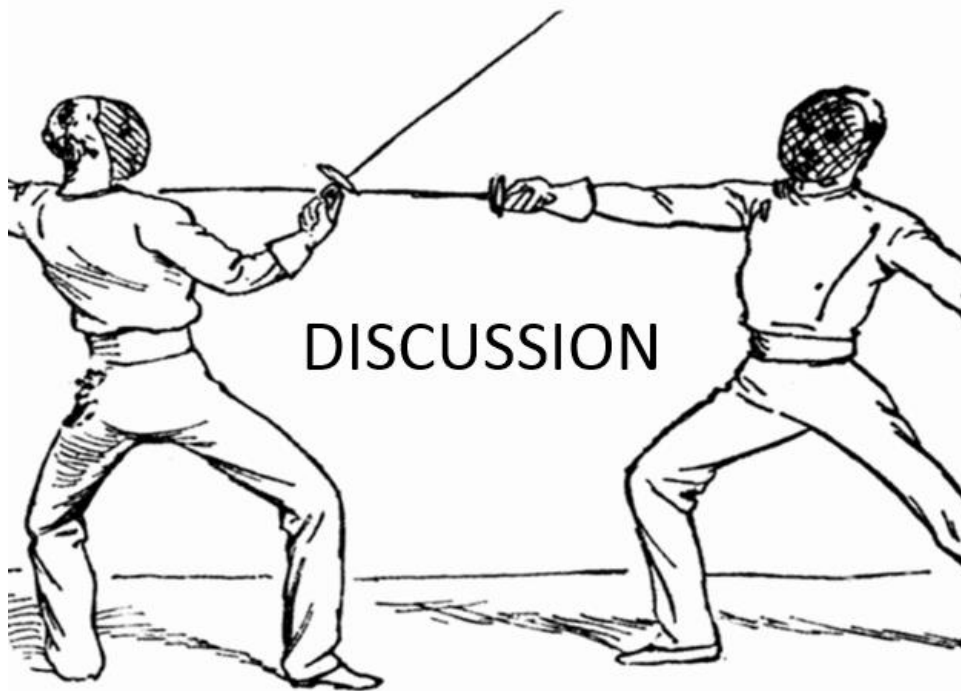
- ▶ Describe findings of study
 - ▶ Graphs, figures and tables to help visualise data
 - ▶ Complete overview
 - ▶ Textual support
 - ▶ Summary of most important findings
 - ▶ Interpretation / explanation of results
 - ▶ Difficulties in interpretation

The composition of amino acid pairs **indicates that there are remarkable differences among** four functional groups of SRPs.

Bundles of these fibrils **were also found to be** single crystalline, **suggesting that** the individual fibrils are arranged in a highly organized fashion within the bundle.

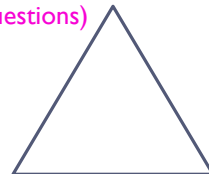
The computed **results show that** the present scheme is **a successful numerical technique** for solving the MRLW equation.





Discussion / Conclusion

- ▶ Re-establish main findings / hypotheses (no new ideas, questions)
- ▶ Relation to existing research (confirm / contradict)
- ▶ Relevance / implications for future practice, industrial applications, society in general
- ▶ Remaining problems → suggestions for future research



This analysis **clearly shows that** the present scheme is **a successful numerical technique** for solving the MRLW equation.

These results **confirm earlier findings** and suggest that the size and volume of the particles are critical factors.

Thus, the model **could aid in better understanding** caspase activation and **identifying therapeutic approaches** promoting or retarding apoptotic cell death.

Consequently, this work establishes **a promising basis for future optimization strategies**.

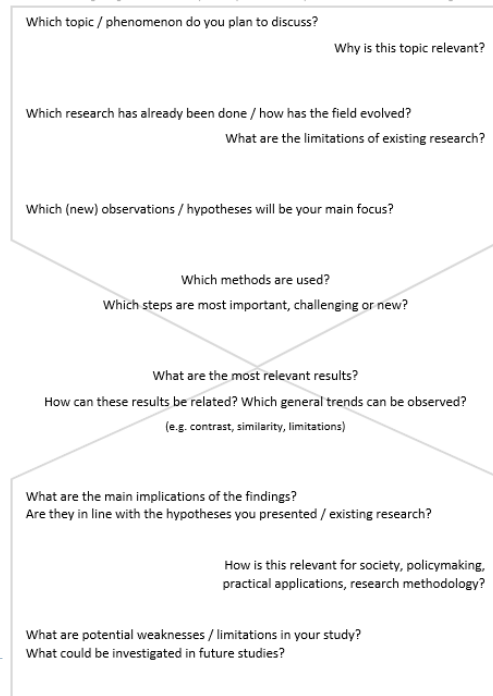
This relatively simple method of graphene integration will be **easily adoptable** in the industrialization of graphene-based devices.

Further studies are needed to determine the ability of cells to recover from repeated exposure.



Pre-writing outline

- ▶ Topics typically covered in scientific papers in a specific order
- ▶ Useful questions to think about *before* you start writing
- ▶ Not intended as template, but starting point to trigger ideas



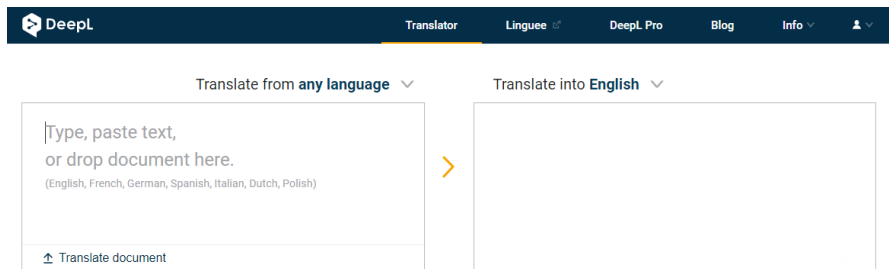
While writing your text...

- ▶ Typical language features of academic papers
 - ▶ Clear and accessible language
 - ▶ Formal style
 - ▶ Impersonal constructions
 - ▶ Hedging
- ▶ Useful websites and tools



Online tools: translations

- ▶ Van Dale
 - (<http://vowb.vandale.be.kuleuven.ezproxy.kuleuven.be/zoeken/zoeken.do>)
 - ▶ Free online access for KU Leuven students
- ▶ **DeepL**: generally more reliable than Google Translate + offers synonyms (click on word in translation)



Online tools: translations

- ▶ Van Dale
 - (<http://vowb.vandale.be.kuleuven.ezproxy.kuleuven.be/zoeken/zoeken.do>)
- ▶ DeepL
 - ▶ Use with care
 - ▶ Compare different translations and select the best option
 - ▶ Avoid literal, word for word translations
 - ▶ Use other tools in combination (next slides)
 - ▶ Context-specific usage
 - ▶ How words combine with other words



Improving word choice: **collocations**

- ▶ How to avoid literal translations?
 - ▶ Pay attention to collocational patterns in English
 - = how words combine with other words in a specific language
 - ▶ Collocation = set of words that often occur together
 - e.g. *to substantiate a hypothesis, a key point*
 - ~~*play a large impact, a serious explanation for*~~
 - e.g. *poisonous vs. toxic (poisonous snake - ~~toxic snake~~)*
- More natural, idiomatic language



Online tools: **learner's dictionaries**

- ▶ **Longman / Macmillan**
 - ▶ Useful word combinations and phrases
 - ▶ Example sentences
 - ▶ Word forms
 - ▶ Thesaurus



MACMILLAN
DICTIONARY

experiment - definition and synonyms ★★★



NOUN Pronunciation /ɪk'sperɪmənt/ Word Forms

Contribute to our Open Dictionary

- 1 [COUNTABLE] a scientific test to find out what happens to someone or something in particular conditions

Experiments show that many plants tolerate a wide range of light conditions.

laboratory experiments using electric shocks

experiment on/with: *a series of experiments on animals*

do/carry out/conduct/perform an experiment: *Researchers now need to conduct further experiments.*

Synonyms and related words

Scientific research and relating to scientific research:
adjustment, anatomise, anatomize...

[Explore Thesaurus](#)

LONGMAN

experiment

From Longman Dictionary of Contemporary English

ex·per·i·ment¹ /ɪk'sperɪmənt/ ●●● **S3** **W2** noun [countable]

- 1 a scientific test done to find out how something reacts under certain conditions, or to find out if a particular idea is true

experiment with/in/on

experiments with alcohol-fuelled cars

experiments on sleep deprivation

by experiment

Many small birds guide themselves by the stars, as has been verified by experiment.

- 2 a process in which you test a new idea or method to see if it is useful or effective

experiment with/in/on

an experiment in state socialism

COLLOCATIONS

VERBS

do/carry out an experiment

They carried out a series of experiments to test the theory.

He did some experiments with bats.

perform/conduct an experiment *formal* (=do an experiment)

The laboratory began conducting experiments on rats.

an experiment shows/proves/demonstrates something

His experiment showed that lightning was a kind of electricity.

The experiment proved that fabrics treated with the chemical are much less likely to catch fire.

ADJECTIVES/NOUN + EXPERIMENT

a scientific experiment

Astronauts performed scientific experiments during the flight.

animal experiments (=experiments using animals)

I think most animal experiments are cruel and unnecessary.

a laboratory experiment (=one that takes place in a laboratory)

They did a series of laboratory experiments on human sleep patterns in the 1960s.

a field experiment (=one that takes place in the real world, not in a laboratory)

In field experiments, we used patients who did not know that it was a test situation.

COMMON ERRORS

- ▶ Don't say 'make an experiment'. Say *carry out an experiment* or *do an experiment*.

Examples from the Corpus

experiment

- In the classical conditioning **experiment**, the two stimuli were presented simultaneously.
- They are doing **experiments** to learn more about the affects of alcohol on the brain.
- The Institute plans to conduct no further **experiments** on monkeys.
- Laboratory **experiments** have proven that unfamiliar surroundings and a change in daily schedule can lead to sleep problems.
- In one **experiment**, the men were not allowed to sleep and then were tested on how well they were able to concentrate.
- In three other **experiments** fluid transport in the jejunum was nil.
- All three of the **experiments** you did are related to the center of gravity in your body.
- The **experiment** has not been done, and it is hard to imagine its getting a grant.
- Faced with such a question the theorist has to repair to a mental laboratory where he conducts thought **experiments**.
- The elderly people were taught meditation in the 12-week **experiment**.

experiment with/in/on

- Airlines **experiment with** the highest possible fares over the weekend.
- Listen to all kinds of music, and **experiment with** different styles of singing.
- Becky wanted to keep her hair long but **experiment with** different styles.
- First, consider this design for a two-stage **experiment with** rats.
- This must be what people tell themselves when they start **experimenting with** drugs.
- Other areas will probably watch the outcome of this **experiment with** interest.
- This is why people find it difficult to **experiment with** their own behaviour and to practise using behaviours that are unfamiliar.

Online tools: Collocations

► Ozdic collocation dictionary

- Collocational patterns
- Some example sentences



ozdic.com

🔍

hypothesis

- noun

ADJ.

acceptable, plausible | bold

- Scientists have proposed a bold hypothesis.

| unlikely | speculative | testable | working

- These observations appear to support our working hypothesis.

| scientific

-

VERB + HYPOTHESIS

construct, form, formulate, have, make, propose, put forward, suggest

- It is possible to make a hypothesis on the basis of this graph. A number of hypotheses have been put forward.

| consider, discuss, examine, test (out)

- using this data to test her hypothesis

| confirm, prove, support | accept | reject

- None of the hypotheses can be rejected at this stage.

VERB + HYPOTHESIS

concern sth

- Her hypothesis concerns the role of electromagnetic radiation.

| predict sth

- The hypothesis predicts that children will perform better on task A than on task B.



Online tools: **collocations**

To check whether a combination of words is idiomatic

► **Google**

- Search for strings (“ ... ”)
- Use site-specific searches (site:uk)
- Use Google Scholar
- Use wildcard (*)

e.g. “to refuse a hypothesis”
 “to deny a hypothesis”
 “to reject a hypothesis”
 “to * a hypothesis”

The screenshot shows the Google Scholar interface. At the top, there are tabs for 'Web', 'Afbeeldingen', and 'Meer...'. The Google logo is on the left, and the search bar contains the text '"to refuse a hypothesis"'. To the right of the search bar is a blue search button with a magnifying glass icon. Below the search bar, the word 'Scholar' is displayed in red. To its right, the text '1 resultaat (0,07 sec)' is shown, with '1 resultaat' circled in green. Below this, there is a section for 'Artikelen' (Articles) with a sub-section 'Mijn bibliotheek' (My library). Under 'Artikelen', there is a list of search filters: 'Elke periode' (Every period), 'Sinds 2016' (Since 2016), 'Sinds 2015' (Since 2015), 'Sinds 2012' (Since 2012), and 'Aangepast bereik...' (Custom range...). To the right of these filters, there is a 'Tip' (Tip) section that says 'Tip: alleen in het Nederlands zoeken. U kunt uw zoektaal bepalen in Instellingen voor Scholar.' (Tip: only search in Dutch. You can determine your search language in Scholar settings.). Below the tip, there is a search result for 'Renewable portfolio standards in the USA: experience and compliance with targets' by OG Bespalova - 2011 - krex.k-state.edu. The result includes the page number 'Page 1' and the title 'RENEWABLE PORTFOLIO STANDARDS IN THE USA: EXPERIENCE AND COMPLIANCE WITH TARGETS by OLGA GENNADYEVNA BESPALOVA Specialist, Astrakhan State Technical University, 2002 A THESIS ...'. Below the title, there are links for 'Geciteerd door 2' (Cited by 2), 'Verwante artikelen' (Related articles), 'Citeren' (Cite), and 'Opslaan' (Save). At the bottom of the result, there is a checkbox for 'Melding maken' (Report problem).

Web Afbeeldingen Meer...

Google "to deny a hypothesis"

Scholar 9 resultaten (0,08 sec)

Artikelen
Mijn bibliotheek

Elke periode
Sinds 2016
Sinds 2015
Sinds 2012
Aangepast bereik...

Sorteren op relevantie
Sorteren op datum

Het internet
doorzoeken
Zoeken in pagina's in
het Nederlands

☒ inclusief patenten
☒ inclusief citaten

Melding maken

Tip: alleen in het Nederlands zoeken. U kunt uw zoektaal bepalen in Instellingen voor Scholar.

A self-learning fault-diagnosis system
J Zhang, PD Roberts, JE Ellis - ... of the Institute of Measurement and ..., 1991 - tim.sagepub.com
Page 1. 29 A self-learning fault-diagnosis system by J. Zhang, BSc, Msc, PD Roberts, BEng, PhD, DSc, CEng, FIEE, FlntMC, JMIEE, and JE Ellis, BSc, PhD, CEng, MIEE Control Engineering Centre, City University, London EC1V 0HB, UK ...
Geciteerd door 15 Vervante artikelen Alle 3 versies Citeren Opslaan Meer

Recovery and growth in transition: a decade of evidence
O Havrylyshyn - IMF staff papers, 2001 - JSTOR
Page 1. IMF Staff Papers Vol. 48, Special Issue ? 2001 International Monetary Fund
Recovery and Growth in Transition: A Decade of Evidence OLEH HAVRYLYSHYN*
This paper reviews a range of studies that examine differences ...
Geciteerd door 205 Vervante artikelen Alle 4 versies Citeren Opslaan Meer

Characteristics of the reading of a group of ninth-grade pupils
LC Hunt, WD Sheldon - The School Review, 1950 - JSTOR
... Thus, using conventional standards, we do not wish to say that good and poor readers differ in variability of performance. It is suggested that further work should lend evidence to support or **to deny a hypothesis** relative to variability of performance for good and poor readers. ...
Geciteerd door 11 Vervante artikelen Citeren Opslaan

Statistical Number of Primary Discharges Required for Solar Array Secondary-Arc Tests
M Cho, T Kitamura, T Ose, H Masui... - Journal of Spacecraft and ..., 2009 - arc.aiaa.org
... short-circuit current of solar array strings IST = string current I1 = power supply constant current k = number of bins n = number of trials in a test Pc = confidence level Pd = defect rate Pi = probability that an event occurs in the ith bin Pt = probability **to deny a hypothesis** based on t ...
Geciteerd door 6 Vervante artikelen Alle 2 versies Citeren Opslaan Meer

Web Afbeeldingen Meer...

Google "to reject a hypothesis"

Scholar Ongeveer 1.350 resultaten (0,10 sec)

Artikelen
Mijn bibliotheek

Elke periode
Sinds 2016
Sinds 2015
Sinds 2012
Aangepast bereik...

Sorteren op relevantie
Sorteren op datum

Het internet
doorzoeken
Zoeken in pagina's in
het Nederlands

☒ inclusief patenten
☒ inclusief citaten

Melding maken

Tip: alleen in het Nederlands zoeken. U kunt uw zoektaal bepalen in Instellingen voor Scholar.


Determination of cointegration rank in the presence of a linear trend
S Johansen - Oxford Bulletin of Economics and Statistics, 1992 - Wiley Online Library
... 1 T., 2 C Hl Tl 3 4 n H f n n n Hl:- 1 C 4-l q-l Tp-l 2p- 1 2P Notice that the hypotheses are no longer nested, but we number them from left to right and top to bottom and, decide **to reject a hypothesis** if all hypotheses with smaller number are also rejected. ...
Geciteerd door 992 Vervante artikelen Alle 7 versies Citeren Opslaan Meer

Comparative politics and the comparative method
A Lijphart - American political science review, 1971 - Cambridge Univ Press
... The erroneous tendency **to reject a hypothesis** on the basis of a single deviant case is rare when the statistical method is used to analyze a large sample, but in the comparative analysis of a small number of cases even a single deviant finding tends to loom large. ...
Geciteerd door 2828 Vervante artikelen Alle 18 versies Citeren Opslaan Meer

Does the stock market rationally reflect fundamental values?
LH Summers - The Journal of Finance, 1986 - Wiley Online Library
... The inability of a body of data to reject a scientific theory does not mean that the tests prove, demonstrate or even support its validity. As students of elementary statistics are constantly reminded, failure **to reject a hypothesis** is not equivalent to its acceptance. ...
Geciteerd door 1296 Vervante artikelen Alle 18 versies Citeren Opslaan Meer

The abuse of power
JM Hoening, DM Heisey - The American Statistician, 2012 - amstat.tandfonline.com
... null hypothesis of no effect is in fact false. This can be called the dilemma of the nonrejected null hypothesis: what should we do when we fail **to reject a hypothesis**?
Dismayingly, there is a large, current literature that advocates ...
Geciteerd door 892 Vervante artikelen Alle 17 versies Citeren Opslaan Meer

Web Afbeeldingen Meer...

Google "to * a hypothesis" 

Scholar Pagina 3 van ongeveer 64.100 resultaten (0,06 sec)

☒ inclusief patenten
☒ inclusief citaten
☒ Melding maken

Hypothesis testing when a nuisance parameter is present only under the alternative
 RB Davies - Biometrika, 1987 - Biometrika Trust
 ... Upcrossing. 1. INTRODUCTION We wish to **test a hypothesis** in the presence of a nuisance parameter, θ , which enters the model only under the alternative. In other words, θ is meaningless under the null hypothesis. Traditional ...
 Geciteerd door 1393 Verwante artikelen Alle 9 versies Citeren Opslaan Meer

A new model for an etiology of rheumatoid arthritis: smoking may trigger HLA-DR (shared epitope)-restricted immune reactions to autoantigens modified by ...
 L Klareskog, P Stolt, K Lundberg... - Arthritis & ... , 2006 - Wiley Online Library
 ... negative RA. Taken together, these data permitted us to **formulate a hypothesis** on how smoking may act together with genetic factors and the immune system in being a possible causative agent for RA. SUBJECTS AND METHODS. ...
 Geciteerd door 980 Verwante artikelen Alle 11 versies Citeren Opslaan Meer

"Homology" in proteins and nucleic acids: A terminology muddle and a way out of it
 E Zuckerkandll - 1987 - cell.com
 ... the authors intent. The final case occurs most frequently and is the most subtle and therefore most troublesome. Here, similarities (called homologies) are used to **support a hypothesis** of evolutionary homology. In this case, the ...
 Geciteerd door 252 Verwante artikelen Alle 10 versies Citeren Opslaan

Online tools: collocations

► Just the Word

► Netspeak

- Tools to find the most frequent word combinations

e.g. *point / hypothesis*

which verbs?

which adjectives?



Enter a word or short phrase:

conclusion

combinations

alternatives from thesaurus

alternatives from learner errors

Recent searches

Professional

right

attend

error

income

Popular searches

public goods

career

very magnificent

performance

prejudice

jtw

[Help](#) [Home](#)

combinations

alternatives from thesaurus

alternatives from learner errors

★ View in Wordle

conclusion**V obj *conclusion*****cluster 1**

accept conclusion (27)

agree with conclusion (19)

bring to conclusion (58)

lead to conclusion (199)

take to conclusion (31)

cluster 2

confirm conclusion (26)

justify conclusion (15)

reinforce conclusion (15)

support conclusion (72)

cluster 3

arrive at conclusion (54)

come to conclusion (564)

reach conclusion (417)

reach conclusion by (11)

cluster 4

avoid conclusion (38)

escape conclusion (17)

cluster 5

jump to conclusion (99)

leap to conclusion (16)

unclustered

base conclusion (43)

challenge conclusion (15)

draw conclusion (375)

draw conclusion from (16)

force to conclusion (13)

resist conclusion (16)

summarize conclusion (49)

conclusion

V obj *conclusion*, e.g. come to conclusion

conclusion subj V, e.g. conclusion be

conclusion subj ADJ, e.g. conclusion correct

conclusion subj PREP, e.g. conclusion to

ADV *conclusion*, e.g. logical conclusion

conclusion PREP, e.g. conclusion about

conclusion V, e.g. conclusion regarding

conclusion V, e.g. conclusion drawn

PREP *conclusion*, e.g. to conclusion

N and *conclusion*, e.g. finding and conclusion

conclusion and N, e.g. conclusion and recommendation

article *conclusion*, e.g. this conclusion

phrase (nn) nn is the frequency of usage

Good Word Combinations

Bad Word Combinations

Similarity of meaning

word - Means singular noun only



Enter a word or short phrase:






make a conclusion

combinations

alternatives from thesaurus

alternatives from learner errors

Recent searches

Professional 
 right 
 attend 
 error 
 income 

Popular searches

public goods
 career
 very magnificent
 performance
 prejudice

jtw

[Help](#) [Home](#)

combinations








alternatives from thesaurus

alternatives from learner errors



View in Wordle



make a conclusion**replacing *make* in 'make conclusion'**


make conclusion (28)	
come to conclusion (564)	
reach conclusion (417)	
force to conclusion (13)	
lead to conclusion (199)	
arrive at conclusion (54)	
draw conclusion (375)	

make a conclusion

[replacing *make* in 'make conclusion'](#), e.g.
 come to conclusion

[replacing *conclusion* in 'make conclusion'](#), e.g. make
 decision

phrase (nn) nn is the frequency of usage
 Good Word Combinations
 Bad Word Combinations

 Similarity of meaning

.word - Means singular noun only

i x Q

how to ? this
 see ... works
 it's [great well]
 and knows #much
 { more show me }

The ? finds one word.
 The ... find many words.
 The [] compare options.
 The # finds similar words.
 The { } check the order. >>



to ? a hypothesis

i x Q

to test a hypothesis	5,400 100.0%	—
----------------------	--------------	---

Suppose a researcher conducts an experiment **to test a hypothesis**. If she doubles her sample size, which of the following will increase? I. The power of the ... ↗

Whenever you need **to test a hypothesis**, consider using the Sample Planning Wizard. The Sample Planning Wizard is a premium tool available only to ... ↗

Caution: A statistical significance test is intended **to test a hypothesis**. If the hypothesis summarizes a set of data, there is no value in testing the hypothesis on ... ↗

Popular Pages. Statistically Significant Results - How **to Test a Hypothesis**. Follow Us. Facebook · Twitter · Google+. Navigation. Research · Academic · Write ... ↗

Because the whole point of doing an experiment is **to test a hypothesis**. Said another way: If you didn't have a hypothesis, you wouldn't know what experiment ... ↗

Survey Science: Asking Questions and Analyzing Answers **to Test a Hypothesis**. By Amy Cowen on September 23, 2015 10:45 AM. Using a survey to gather ... ↗

In order **to test a hypothesis** in statistics, we must perform the following steps: 1) Formulate a null hypothesis and an alternative hypothesis on population. ↗

It is not possible **to test a hypothesis** directly. Instead, you must turn the hypothesis into a null hypothesis. The null hypothesis is created from the hypothesis by ... ↗

(The word tails refers to the tail ends of the statistical distribution such as the familiar bell-shaped normal curve that is used **to test a hypothesis**. One tail ... ↗



Online tools: Academic language

► Phrasebank for AE:

- General academic phrases, meta-discourse
- <http://www.phrasebank.manchester.ac.uk>



Academic Phrasebank

The University of Manchester

Introducing Work	Referring to Sources	Describing Methods	Reporting Results	Discussing Findings	Writing Conclusions
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HOME »

GENERAL LANGUAGE FUNCTIONS

- Being Critical
- Being Cautious
- Classifying and Listing
- Compare and Contrast
- Defining Terms
- Describing Trends
- Describing Quantities
- Explaining Causality
- Giving Examples
- Signalling Transition
- Writing about the Past

ABOUT PHRASEBANK

An enhanced and expanded version of PHRASEBANK can now be downloaded in PDF:



Summarising research findings

This study has identified ...

This study has shown that ...

The research has also shown that ...

The second major finding was that ...

These experiments confirmed that ...

X made no significant difference to ...

This study has found that generally ...

The investigation of X has shown that ...

The results of this investigation show that ...

Suggesting implications for the field of knowledge

In general, therefore, it seems that ...

The results of this study indicate that ...

These findings suggest that in general ...

The findings of this study suggest that ...

Taken together, these results suggest that ...

An implication of this is the possibility that ...

The evidence from this study suggests that ...

Overall, this study strengthens the idea that ...

The current data highlight the importance of ...

The findings of this research provide insights for ...

The results of this research support the idea that ...

Online tools: pronunciation

► **Howjsay**

howjsay . com

- ▶ Mainly British English, with American English alternatives
- ▶ Audio only
- ▶ Very comprehensive (also less frequent words or technical terms)

<input type="text" value="hypothesis"/>	<input type="button" value="Submit"/>	<input type="button" value="Browse"/>
<div>Notes • Tools • New entries • iPhone • Android</div>		
<div>hypothesized</div> <div>hypotheication</div> <div>hypoheicator</div> <div>hypothenar</div> <div>hypothenuse</div> <div>hypothermal</div> <div>hypothermia</div> <div>hypothermic</div> <div>hypothermy</div> <div>hypotheses</div> <div>hypothesis</div> <div>hypothesis</div> <div>hypothesized</div> <div>hypothesiser</div> <div>hypothesises</div> <div>hypothesising</div> <div>hypothesize</div> <div>hypothesized</div>	<div>Define your entry here</div>	<div>Translate your entry here</div>

Online tools: individual practice

► **Scientific English Online**

- ▶ Online learning platform developed at ILT
- ▶ Specifically targeted at science students
- ▶ Based on authentic examples, student assignments and common errors



Online tools: [individual practice](#)

▶ **Scientific English Online**

- ▶ Grammar
 - ▶ Address common errors
 - Simple usage rules with examples
 - Exercises
- ▶ Vocabulary
 - ▶ Expand scientific vocabulary
 - ▶ Improve formal style
- ▶ Structure
 - ▶ Gain insight into coherence and key elements of academic papers

Scientific English Online
Grammar
Vocabulary
Structure



Online tools: [feedback](#)

▶ **Academic Writing Assistant**

- ▶ Trial version available via ILT website (feedback welcome!)
- ▶ Submit your writing and receive automated feedback
 - ▶ Language (grammar, vocabulary, spelling)
 - ▶ Style
 - ▶ Structure



Interfacultair Instituut voor
Levende Talen

Text review

Text enrichment

Language issues

Coherence and cohesion

Style

[SOURCES] - [HELP]

Academic Writing Assistant

Welcome to the **Academic Writing Assistant**, a writing tool designed to help students and researchers write academic texts. The tool comprises two components.

- Text review**
This component offers advice on common language issues, coherence and cohesion, and stylistic matters. For each of these aspects, the writing tool will highlight **possible** problems in your text. As comments are generated automatically, not all the elements which are highlighted are necessarily wrong or relevant to your text. Conversely, the tool only focuses on a limited number of aspects, so some mistakes may not be indicated.
- Text enrichment**
This component provides information on specific **words and word combinations** (e.g., to carry out / conduct research) as well as on the **contexts** in which they appear.

Some features of the Academic Writing Assistant still need to be fine-tuned. We therefore welcome your feedback and suggestions for improving the tool.

To get started, paste your text in the box below and click one of the buttons in the menu.

Online tools: feedback

- ▶ **Academic Writing Assistant**
 - ▶ Trial version available via ILT website (feedback welcome!)
 - ▶ Submit your writing and receive automated feedback
 - ▶ Language (grammar, vocabulary, spelling)
 - ▶ Style
 - ▶ Structure
 - ▶ Use as *learning* tool
 - ▶ Helps you have a critical look at your writing
 - Identifies patterns and offers tips to improve text
 - Signals *potential* problems
 - ▶ Not a guarantee for an error-free result
 - Some errors may not be identified

Language issues - common vocabulary errors

Text review Text enrichment

The highlighted words possibly contain a vocabulary error. Read the information provided by the tool and, if necessary, correct the mistake.

Language issues

 Spellchecker
data SCOWL

UK

US

 Common
vocabulary errors

 Common
grammar errors

Tense use

Adverb position



I assume that, like its predecessor, the new pronoun has developed from the noun man, partly because of its phonetic form but also as a result of the fact that it is common cross-linguistically for pronouns to develop from nouns, especially nouns that refer to person or people (Lehmann 2002: 35; Heine and Song 2011). However, it is unusual for first person singular pronouns to develop in this way. Little is known about their origins. The information that does exist, however, shows them emerging from oppositions in deictic space or social status (Heine and Song 2011: 610). The emergence of man as a pronoun with first person reference is an unexpected development and one of the aims of this paper is to explain how man can come to have this values. Section two **discusses about** the more general issue of how personal pronouns emerge, a further question that has rarely been addressed. Heine and Song (2011: 587) note that this is mainly because of a lack of data. They argue that new pronouns are likely to originate as a rhetorical strategy used by one individual and then adopted by others but since the individual act is no longer recoverable our ideas about the development of pronouns have to be based on hypotheses about how people interacted in the past, rather than on facts that are readily accessible to the student of language use (2011: 626). I will suggest to view the two research questions as connected, in that the use of man as a first person pronoun by young speakers in inner-city areas is a consequence of the rhetorical strategies for which they find it useful.

Since the pronoun man is a new phenomenon in present-day English, it does not occur very frequently, so the analysis presented here is still suffering from the problem of insufficient data that was regretted by Heine and Song. Although, we can document some of the facts and observe the rhetorical acts in which man occurs as a pronoun. Though the conclusions will be necessarily tentative, it is so rare to be able to document the emergence of a new pronoun that it seems worth attempting an understanding of the processes involved.



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Although is usually not followed by a comma.

X It is true that these decision trees are accurate. **Although**, they often suffer from excessive complexity.

V **Although** it is true that these decision trees are accurate, they often suffer from excessive complexity.

V **Although**, as stated before, it is true that these decision trees are accurate, they often suffer from excessive complexity.

V It is true that these decision trees are accurate. **However**, they often suffer from excessive complexity.



Text review **Text enrichment**

Language issues

Spellchecker data SCOWL
UK US

Common vocabulary errors

Common grammar errors

Tense use

Adverb position

↓

Coherence and cohesion

↓

Style

[SOURCES] - [HELP]
[GIVE FEEDBACK]

This part of the tool focuses on the aspects of the English tense system which are most relevant within the context of formal writing.

- Verb forms indicated in red are **probably incorrect**.
- The past and present perfect are frequently confused. [Click here](#) for more information.

Past versus present perfect

- The **past tense** is used to refer to something that happened at a specific moment in the (distant or recent) past. **Definite time** locations, such as *in 2003*, *last year* or *yesterday*, are signals that the past tense should be used.

*Last year, they **extended** the experiment to the entire country.*

- The **present perfect** is used to refer to events or activities that took place in the past but are still connected with the present. Indications of **time up to now**, such as *already*, *so far* and *in the last five years*, are signals that the present perfect tense should be used.

*Over the **last few years**, we **have set forth** many initiatives.*

- Progressive forms are often overused. [Click here](#) for more information.

I assume that, like its predecessor, the new pronoun **has developed** from the noun man, partly because of its phonetic form but also as a result of the fact that it is common cross-linguistically for pronouns to develop from nouns, especially nouns that refer to person or people (Lehmann 2002: 35; Heine and Song 2011). However, it is unusual for first person singular pronouns to develop in this way. Little is known about their origins. The information that does exist, however, shows them emerging from oppositions in deictic space or social status (Heine and Song 2011: 610). The emergence of man as a pronoun with first person reference is an unexpected development and one of the aims of this paper is to explain how man can come to have this values. Section two discusses about the more general issue of how personal pronouns emerge, a further question that **has rarely been addressed**. Heine and Song (2011: 587) note that this is mainly because of a lack of data. They argue that new pronouns are likely to originate as a rhetorical strategy **used** by one individual and then **adopted** by others but since the individual act is no longer recoverable our ideas about the development of pronouns **have to be based** on hypotheses about how people interacted in the past, rather than on facts that are readily accessible to the student of language use (2011: 626). I will suggest to view the two research questions as connected, in that the use of man as a first person pronoun by young speakers in inner-city areas is a consequence of the rhetorical strategies for which they find it useful.

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Coherence and cohesion

Sentence length

Paragraph length

Reference

Linking words and phrases

Repeated words

Recurring patterns

↓

Style

[SOURCES] - [HELP]
[GIVE FEEDBACK]

- Relative clauses**
We also conducted tests for possible non-response bias. The details of these tests are summarised in Appendix 1.
→ We also conducted tests for possible non-response bias, the details of which are summarised in Appendix 1.
- Participle clauses**
Items which were highly skewed were eliminated. This resulted in the removal of around half of the items.
→ Items which were highly skewed were eliminated, resulting in the removal of around half of the items
- Linking words**
Participants in the treatment tended to agree with this statement. Participants in the control condition were more likely to disagree.
→ Participants in the treatment tended to agree with this statement, whereas participants in the control condition were more likely to disagree.

- Texts with an average sentence length of more than 25 words are often difficult to read.
All sentences **longer than 30 words** have been indicated in **this colour**. Check whether it would not be better to split or shorten the sentence.

Sentence length in **quotations** should of course not be adapted.

I assume that, like its predecessor, the new pronoun has developed from the noun man, partly because of its phonetic form but also as a result of the fact that it is common cross-linguistically for pronouns to develop from nouns, especially nouns that refer to person or people (Lehmann 2002: 35; Heine and Song 2011). However, it is unusual for first person singular pronouns to develop in this way. Little is known about their origins. The information that does exist, however, shows them emerging from oppositions in deictic space or social status (Heine and Song 2011: 610). The emergence of man as a pronoun with first person reference is an unexpected development and one of the aims of this paper is to explain how man can come to have this values. Section two discusses about the more general issue of how personal pronouns emerge, a further question that has rarely been addressed. Heine and Song (2011: 587) note that this is mainly because of a lack of data. They argue that new pronouns are likely to originate as a rhetorical strategy used by one individual and then adopted by others but since the individual act is no longer recoverable our ideas about the development of pronouns have to be based on hypotheses about how people interacted in the past, rather than on facts that are readily accessible to the student of language use (2011: 626). I will suggest to view the two research questions as connected, in that the use of man as a first person pronoun by young speakers in inner-city areas is a consequence of the rhetorical strategies for which they find it useful.

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word/expression	Definition
and another	<p>1. [ADD INFORMATION] You can use the determiners another and other to introduce an additional item.</p> <ul style="list-style-type: none"> It is important to get your performers to keep the microphone as still as possible. Another point for them to remember is not to speak directly at the microphone but to aim instead just over the top of it. One type of skin cancer is caused when skin that is not used to the sun is exposed to short bursts of strong sunlight. Other types of skin cancer are associated with continued exposure to the sun over a long period.
besides	<p>2. [CHANGE TOPIC] The determiner another is often used with nouns such as subject, question, issue and point to change topic:</p> <ul style="list-style-type: none"> Exercise is another subject which should also be considered. <p>The preposition besides can be used to add new information but it is less frequent than in addition to in academic writing and professional reports:</p> <p><i>Premature infants often have other common complicating conditions besides heart disease.</i></p> <p>Besides contributing to heart disease, diabetes can also increase the risks of developing kidney problems or blindness.</p>
besides	<p>Besides introduces a final point or argument, especially one which is decisive. Its most typical position is at the beginning of the sentence, followed by a comma:</p> <p><i>Even taped interviews can only be read with caution, since they may have been edited, and the reader will not be told how. Besides, it is an everyday experience that people are sometimes wrong in conversation, and may not remember events well.</i></p>
further	<p>1. [ADD INFORMATION] You can use the adjective further to introduce an additional item:</p> <p><i>Further research is needed.</i></p> <p>Note that you can also use further as an adverb, found mainly inside the sentence:</p>

Reference books: academic writing

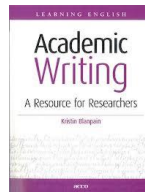
▶ Effective Writing in English

Mike Hannay & J. Lachlan Mackenzie, Coutinho



▶ Academic Writing

Kristin Blanpain, Acco



→ slides summarise most relevant guidelines

KU LEUVEN
Zoeken in KU Leuven

INSTITUUT VOOR LEVENDE TALEN

HOME TAALCOURSUSSEN DIGITALE TOOLS ONLINE INSCHRIJVEN FAQ CONTACT

ILT WRITING CENTRE
You can book an appointment to discuss an assignment with a writing tutor twice a year.
[MAKE AN APPOINTMENT](#)

WHAT CAN WE HELP YOU WITH?

The Writing Centre tutors are available to help you with any academic writing assignment (except for those due for language courses): we can offer feedback on papers, reports, Bachelor's or Master's theses, but not on non-academic texts, such as application letters or CVs.

More information ^

We can assist you with various writing issues at any stage of the writing process: narrowing your topic, developing your research question, organizing your arguments, referring to the literature or improving academic style. For questions relating to time management, planning or motivation, you can contact the [Study Advice Service](#) via their [online contact form](#).

What do we not do?

- We do not offer advice on the content or subject matter of your text.
- We do not proofread or edit your text.

ILT Writing Centre

- ▶ Free one-on-one tutoring sessions to help students with academic writing assignments.
 - ▶ Individual feedback on papers, reports, Bachelor's or Master's theses
 - ▶ Not on non-academic texts (application letters, CVs)
- ▶ Book an appointment via ILT website
 - ▶ All students allowed two appointments a year



ILT Writing Centre

- ▶ Not only for students who are struggling, good writers also welcome!
 - ▶ Assistance with macro issues such as organization, focus, clarity and register
 - ▶ At any stage of the writing process:
 - Narrowing down topic
 - Developing research question
 - Organizing arguments
 - Referring to literature
 - Improving academic style
 - ▶ Not a proofreading service



Academic style

- ▶ Clear and accessible language
- ▶ Formality (word choice and sentence structures)
- ▶ Impersonal constructions
- ▶ Hedging



Clear, accurate and accessible language

- ▶ Precise topic-specific vocabulary / terminology
 - ▶ Avoid vague or ambiguous descriptions
 - ▶ Identify useful *collocations* in papers from the same domain
- ▶ Structuring phrases / general academic language
 - = equally important!
 - ▶ To establish context, relevance, logical relations, focus
 - ▶ Be reader-oriented

→ Useful resource: Academic Phrasebank



Accessible language?

We describe a mathematical model of the coupled fluid mechanics and gas-phase chemical kinetics in a rotating disk chemical vapor deposition reactor. The analysis is for the flow between an infinite radius, heated nonporous rotating disk and a parallel infinite radius porous surface through which reactive fluid is injected normal to the disk. The analysis extends the usual von Karman transformation to allow specification of the normal velocity at the porous disk, and reduces to a stagnation point flow in the limit of zero rotating rate. The deposition of silicon from silane is used as an example system. A new reaction mechanism and set of rate constants are given for the thermal decomposition of silane. We present an RRKM analysis of several of the unimolecular reactions in the mechanism. Calculated velocity and temperature profiles, chemical species density profiles, and deposition rates as functions of susceptor temperature, spin rate, and inlet flow velocity are presented.

- ▶ Limited use of general academic language / structuring phrases

Formal vocabulary

- ▶ Basic, everyday words can often be replaced by more formal equivalents.

<i>A lot of articles have been published.</i>	→	<i>many, numerous articles</i>
<i>The results have been pretty good</i>	→	<i>have been quite promising</i>
<i>His claims appeared a little bit biased.</i>	→	<i>appeared slightly biased</i>
<i>The results were kind of disappointing.</i>	→	<i>were rather disappointing</i>

- ▶ Often words with a Latinate origin can be used as an alternative

<i>Little research has been done to</i>	→	<i>research has been conducted</i>
<i>This issue needs closer attention.</i>	→	<i>requires closer attention</i>
<i>The survey aims to get information on</i>	→	<i>to obtain information</i>

- ▶ Avoid unnecessarily formal words, literary expressions, metaphors (e.g. *a plethora of*)



Formal vocabulary

► Avoid phrasal verbs (verbs followed by a preposition)

This section looks at the practical issues.

→ *examines the practical issues*

This brings up an interesting question.

→ *raises an interesting question*

This goes against previous findings.

→ *contradicts previous findings*

► Replace less formal link words with more formal options

and, also → *furthermore, moreover, in addition, additionally, as well as*

but → *however, nevertheless, although, while, whereas*

so → *therefore, consequently, as a result*

like → *for example, such as*

Formal vocabulary

► This topic *is getting* much attention in the literature.



Thesaurus.com synonyms for **get**

get see definition of get show all

verb come into possession of; achieve verb fall victim to verb seize verb come to be verb understand

Relevance A-Z Complexity + Length +

Synonyms for **get** verb come into possession of; achieve

bring	receive	compass	net	buy out
draw	score	cop	parlay	cash in on
earn	take	educe	procure	chalk up
gam	win	effect	reap	clean up
grab	access	elicit	secure	come by
have	accomplish	evoke	snag	get hands on
land	acquire	extort	snowball	lock up
make	annex	extract	wangle	make a buy
obtain	attain	fetch	bring in	make a killing
pick up	bag	glean	build up	rack up
pull	capture	hustle	buy into	snap up
realize	clear	inherit	buy off	succeed to

Formal vocabulary

- This topic *is getting* much attention in the literature.

LONGMAN Search in English

attention

From Longman Dictionary of Contemporary English

at·ten·tion /ə'tenʃən/ ●●● **S2** **W1** **noun** 🔊 🔊

2 **INTEREST** [plural, uncountable] the interest that people show in someone or something

🔊 She was flattered by all the attention he was giving her.

attract/receive/enjoy attention

🔊 a player who quickly attracted the attention of several clubs

🔊 The exhibition received little attention in the press.

public/media/press attention

🔊 Her case attracted a great deal of media attention.

Formal vocabulary

- This topic *is getting* much attention in the literature.

Google "topic is * much attention" 🔍

Scholar Ongeveer 27 resultaten (0,02 sec)

Artikelen Tip: alleen in het Nederlands zoeken. U kunt uw zoektaal bepalen in Instellingen voor Scholar.

Mijn bibliotheek

Elke periode Sinds 2017 Sinds 2016 Sinds 2013 Aangepast bereik...

Sorteren op relevantie Sorteren op datum

Elke taal Zoeken in pagina's in het Nederlands

☒ inclusief patenten ☒ inclusief citaten

☒ Melding maken

Operating systems: The problems of performance and reliability
B. Bandell - IFIP Congress (1), 1971 - history.cs.ncl.ac.uk
... trails etc. (see for example Fraser (44) and the previous and use of protection mechanisms. This latter topic **is receiving much attention** at the moment but is I am sure still at a very early stage of development. One approach involving ...
Geciteerd door 25 Verwante artikelen Alle 6 versies Citeren Opslaan Meer

TEAM-BUILDING: Making Collaborative Practice Work
SR Stapleton - Journal of Nurse-Midwifery, 1998 - Wiley Online Library
... Although the topic **is receiving much attention** in the literature and at professional conferences and meetings, do health care providers fully appreciate what collaboration means, know how to put it into practice in their day-to-day professional lives, or recognize what it requires of ...
Geciteerd door 55 Verwante artikelen Alle 2 versies Web of Science 18 Citeren Opslaan

Table I—Comparison of Glucose Methods
S. Enor - Laboratory Medicine, 1975 - researchgate.net
... 20.7 mg/dl, 19.8 mg/dl. We have discussed one approach for evaluating methods³ and have cited a glucose study as an ex-ample of such an evaluation.⁴ This topic **is getting much attention** today due to the FDA's recent pro-posal of a glucose product class standards which ...
Geciteerd door 2 Verwante artikelen Alle 2 versies Citeren Opslaan Meer

High-efficiency voltage oscillation in VO 2 planer-type junctions with infinite negative differential resistance
J. Sakai - Journal of Applied Physics, 2008 - aip.scitation.org
... Phys. Lett. <https://doi.org/10.1063/1.2815927> 91, 223505 (2007). Recently, this topic **is attracting much attention** again because the novel physical properties of strongly correlated electronic oxide materials have been studied energetically. ...
Geciteerd door 35 Verwante artikelen Alle 5 versies Web of Science 26 Citeren Opslaan

Operating Systems: The Problems of Performance and Reliability
B. Bandell - Reliable Computer Systems, 1985 - Springer
... trails, etc. (see for example Fraser (11)). and the provision and use of protection mechanisms. This latter topic **is receiving much attention** at the moment, but is I am sure still at a very early stage of development. One approach ...
Geciteerd door 3 Verwante artikelen Alle 2 versies Citeren Opslaan Meer

Formal grammar

► Avoid contracted verb forms

- e.g. Export figures **won't** improve. → **will not**
 These results **can't** be ignored. → **cannot** (= one word!)

► Use formal negative forms

<i>not ... any</i>	<i>not ... much</i>	<i>not ... many</i>
→ no	→ little	→ few

- e.g. There is **not much** evidence of communication interference in office situations.
 → **little** evidence
 This study did **not** offer **any** details on interaction mechanisms.
 → offered **no** details
 This study did **not** find **many** examples of successful programs.
 → found **few** examples



Formal grammar

► Lists and examples

- e.g. *Other regions need the help of the WTO, the World Bank, **etc.***
*Scientists say that global warming may be induced by **e.g.** volcanism or solar activity.*

► Use a **more general** term combined with **including, such as, to include** or **and other**

- e.g. *Other regions need the help of **organizations** **such as** the WTO and the World Bank.*
*Scientists say that global warming may be induced by a variety of **natural causes, including** volcanism and solar activity.*



Formal grammar

- ▶ Construct longer, complex sentences
 - ▶ Link ideas using conjunctions, relative clauses, participle clauses (see slides on grammar / common errors)
- ▶ Use short, simple sentences sparingly
 - ▶ Rhetorical effect



Formal grammar

- ▶ Limit the use of direct questions
 - e.g. *Have these rocks undergone any tilting or rotation since their deposition or formation?*
 - *This raises the question whether these rocks have undergone any tilting or rotation since their deposition or formation.*
 - A key issue is whether ...*
 - It is unclear if...*
 - This paper examines why ...*



Depersonalisation

- ▶ Avoid narrative, subjective style
 - ▶ First, *I wanted* to show the widespread impact of this issue on the current political climate.
 - ▶ *I think* it could be difficult to recruit a sufficient number of respondents for this survey.
 - ▶ *You can see* that these two views are incompatible, so *I hope I can* offer an alternative approach to this issue.



Depersonalisation

- ▶ Referring to the reader (you)
 - ▶ Avoid directly addressing the reader
 - e.g. **You can see the results in Table 1.*
 - *The results are shown in Table 1.*



Depersonalisation

- ▶ Self-reference (*I, we*)
 - ▶ Acceptable in some fields / contexts
 - ▶ To describe actions (methods)
 - e.g. *We first selected two types of ...*
 - ▶ Sometimes other constructions more appropriate
 - ▶ Context / background
 - e.g. **From previous research we know ...*
→ *Previous research suggests ...*
 - ▶ General observations / conclusions
 - e.g. **We can clearly see that ...*
→ *It is clear that ...*



Limiting self-reference

- ▶ **Passive constructions (impersonal)**
 - I think magazines have a negative influence on women's body image.*
→ *Magazines are thought to have a negative influence on women's body image.*
 - We asked the respondents to complete a survey.*
→ *The respondents were asked to complete a survey.*
- ▶ **This paper, article, study, ... as subject of sentence**
- ▶ **Constructions with it**
 - It would seem that ..., It is true that ..., It is important to ..., It is clear that ..., It is widely acknowledged that ..., It is worth noting that ...*
- ▶ **Adverbs expressing attitude**
 - unfortunately, regrettably, surprisingly, remarkably, luckily, obviously, clearly, interestingly, more importantly*
- ▶ **Adjectives with a positive or negative meaning**
 - ... is worrying, detrimental, devastating, unfortunate*
 - ... is beneficial, useful, vital, encouraging, promising*

Limiting self-reference: example

The related mathematical modeling **was performed** considering transient conditions. Diverse raw materials **were tested** in order to reveal their suitability for wet Flue Gas Desulfurization. **The research focused** on products from fixation processes materials as well as other types of limestone samples. In this way **it was found** that also waste materials from different environmental processes can **be used** for Flue Gas Desulfurization.



Limiting self-reference

► Use of passive

► Avoid there-passives

e.g. **There was also investigated if some species ...*

→ *It was also investigated if some species ...*

**There was observed a strong correlation.*

→ *A strong correlation was observed.*

**There have been many studies published about ...*

→ *Many studies have been published about ...*

→ *There have been many studies about ...* (not a passive construction)



Limiting self-reference



- ▶ Careful with:
 - ▶ Using *we* instead of *I* → only for multiple authors / team
 - ▶ Using *one* → not equivalent to *men* in Dutch
 - ▶ less common
 - ▶ *one* always includes the author
 - e.g. *One assumes that*
 - *it is generally assumed that, people often assume that*



Hedging



- ▶ Cautious, tentative language
 - ▶ To make statements sound less absolute
 - e.g. *The results **are** in line with ...*
 - ▶ To avoid over-generalisation
 - e.g. *Research to date **proves** that ...*
- Leave room for interpretation, debate, new developments
- e.g. *The independent testing demonstrates that the proposed method **could accurately identify** SRPs in mammals as well as plants.*
*These insights **can be of a great importance** in understanding the activity and stability of Fe-based bimetallic nanoparticles under reactive environments.*



Hedging

- ▶ How could the strength of the following claim be reduced?

These results are problematic.

- ▶ Various strategies:

*These results **seem** problematic.*

→ Weaker verbs (e.g. seem, suggest)

*These results **could** be problematic*

→ Modals (e.g. may, could)

*These results are **rather** problematic*

→ Adverbs (e.g. often, rather, perhaps)

*These results **are likely to** be problematic.*

→ Adjectives (e.g. possible, likely)

***Some** of these results are problematic.*

→ Determiners (e.g. some, many)



Reduce likelihood

Reduce frequency

Reduce strength

Add distance

(remove yourself from
claim / ascribe to others)



Hedging devices

- ▶ Modal verbs

This may affect ... , This could be ... , It might result in ...

- ▶ Adjectives

... is likely to ... , It is possible that ... , This is a potential ...

- ▶ Adverbs

rather, quite, just, slightly, somewhat

often, frequently, usually, sometimes, occasionally, generally

possibly, probably, potentially, perhaps

- ▶ Weaker verbs

*This tends to ... , It seems that ... , This appears to ... , These results indicate ... ,
Evidence suggests ...*

- ▶ Determiners

*In the view of some experts ... , Many specialists regard ... , Some argue that ... , In
most parts of the country, ...*



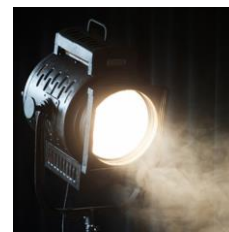
Language tips for specific sections

- ▶ Guidelines and examples to help you improve specific parts of your text
 - ▶ Consult what's relevant / difficult for you
- ▶ Title
- ▶ Introduction
- ▶ Literature review
- ▶ Methods
- ▶ Results
- ▶ Conclusion



Title

- ▶ No full sentences (less concise)
 - ▶ Few verbs → nominalisations
 - e.g. *What is required for ...*
→ *Requirements for ...*
- ▶ Articles often left out
- ▶ Avoid using too many prepositions
 - ▶ Instead use adjectives / compound nouns
 - e.g. *Approaches **to** weighting **of** terms **in** automatic retrieval **of** texts*
→ *Term-weighting approaches **in** automatic text retrieval*
*Requirements **for** Integration **of** Member States **in** Europe*
→ *Integration Requirements **in** European Member States*



Title

- ▶ No full stop at end
 - ▶ Colons / question marks → subtitle / clarification
 - General → Specific
Rich Media, Poor Democracy? Communication Politics in Dubious Times
 - Topic → Method
Management of Natural Hazards: The Role of Spatial Planning
- ▶ All words capitalised, except articles and prepositions
 - ▶ Article just after colon = capitalised



Introduction

- ▶ Relevant context / link with previous research
 - ▶ Use **highlighting phrases** to show relevance
 - ▶ Use **reporting language** to summarize existing research

Gradisar et al. recently presented a novel self-assembly strategy for polypeptide nanostructure design that could lead to **significant developments** in biotechnology.

Drawing on the work of ... / This paper **builds on** current trends in ... / **According to** recent publications / As **observed** by ... / ... **states** that / ... **argues** that

- ▶ Gap in existing research
 - ▶ Use **contrastive link word** to mark transition
 - ▶ Use **negative phrases** to express limitations

Entropy is a **fundamental** thermodynamic property that has **attracted attention** across domains. Inference of entropy of chemical compounds using various approaches has been **a widely studied topic**. **However**, many aspects of entropy in chemical compounds **remain unexplained**.

- ▶ Aims and objectives
 - ▶ Use **link word** to establish connection with research gap and clearly state **objective**

However, this is **practically impossible** due to the high resolution and adaptive grid refinement. **Therefore**, **this paper proposes** an asymptotic coupling concept.

The objective of this study is to present specific theoretical and empirical mathematical models applied to the dissolution of carbonates in acidic environments.



Literature review

Incorporating other people's work:

1. Quoting: identical to original
short section
→ to be used sparingly
2. Paraphrasing: own words
specific point
3. Summarising: own words
main points

ALWAYS ACKNOWLEDGE SOURCES!



Incorporating sources

Integrate in text or not?

- Short quotes:
must be integrated into a sentence; cannot stand alone
 - use a *that*-clause / subordinate clause with *as*
 - use “ ”
- Longer quotes (3 lines or more):
stand-alone paragraph
 - do not use “ ”
 - indented paragraph
 - preceded and followed by a blank line
 - optionally in a smaller typeface
 - introductory text often closes with a colon



Integrating short quotes

In a critical response to the assumption that credible research models for art and design can only be found outside the field, Morgan has argued that “Art should not try to be science. Art should be art.” (Morgan, 2001:15)

For Haraway, a key feature of technoscience is that it is heterogeneous, so that it can be thought of as “a form of life, a practice, a culture, a generative matrix” (Haraway, 1997:50).



Integrating longer quotes

In similar vein, Bernard Harris found boys and girls seemed to be treated equally.

Taken together with the evidence provided by children’s heights, the mortality data provide few grounds for believing that past generations of girls were any more likely to suffer discrimination in the distribution of essential resources than girls today (Harris, 1998, p. 443).

However, Harris argues that this equality changed in adulthood, where an anti-female bias was apparent and may have contributed to excess mortality among women. So, questions remain as to whether there was discrimination within the nineteenth-century English household, and what form best describes the functioning of that household.



Adjusting a quote

► Omission

Hagen (1987: 75) writes: 'Several research projects have shown that teachers do not know how to cope with the problems of dialect-speaking children in schools. [...] Didactic literature seldom presents suggestions and recommendations.'

► Small alterations and additions

According to one recent study of globalisation, '[t]here is little doubt that there has been a growing internationalization of political decision-making.'



Adjusting a quote

► Adding italics

Bernstein (1973: 375) argues that this is something that is 'soon learnt by *both* teachers and pupils' (*my italics*).

► Indicating mistakes

Long (1774:270) defended the planters as 'humane and indulgent masters', claiming that their authority over enslaved people was 'like that of an antient (*sic*) patriarch'.

Hagen (1987: 75) writes: 'In teacher colleges and teacher training this problem is almost non-existent [*sic*]'.



Effective paraphrasing

- ▶ Do not just replace words with synonyms
- ▶ Change the grammar and structure as well
 - ▶ change nouns into verbs, adjectives into adverbs
 - ▶ break up long sentences, combine short sentences
 - ▶ identify the logical links between the ideas and express these in a different way
- ▶ Do not change specific terminology



Incorporating sources

- ▶ Use **reporting language** to indicate which ideas are not yours, but based on other sources

e.g. **Drawing on** the work of ... / This paper **builds on** current trends in ... / **According to** recent publications / As **observed** by ... / ... **states** that / ... **argues** that / ... **challenges** this view / ... **raises** an interesting point / ... **stresses** the importance of ...
- ▶ Add a **reference** to acknowledge your sources

e.g. **Johnson (2007)** **concludes** that stem cell numbers fluctuate widely during aging and that this has a strong genetic basis.
A more recent study **shows** that stem cell numbers fluctuate widely during aging and that this has a strong genetic basis (**Johnson, 2007**).



Reporting verbs: common errors



- ▶ **argue** ≠ *tegenspreken*
→ disagree, reject, challenge
- ▶ **pretend** ≠ *beweren, pretenderen*
→ claim, argue
- ▶ **remark** ≠ *opmerken*
→ observe, note, point out
- ▶ **declare** ≠ *verklaren*
→ explain, clarify



Reporting verbs

- ▶ **Tense usage** (Further guidelines in slides with common errors)
 - ▶ Different options:
 - ▶ past tense: specific study as completed action
→ more distance
e.g. *Jones (2005) **concluded** that ...*
 - ▶ present perfect: how the field has evolved up to now / focus on current impact
→ more relevant
e.g. *Recent research **has become** more aware of industry concerns.*
*Jones (2005) **has concluded** that ...*
 - ▶ present tense: established knowledge / focus on current situation
→ very relevant still
e.g. *Heart functions **are** characterized by two distinct periods called systole and diastole.*
*Jones (2005) **concludes** that ...*
 - **increasing degree of closeness / relevance**



Reporting verbs

- ▶ Avoid use of progressive forms
 - ▶ Most research on stress **has been focusing** on acute life events.
 - ▶ **has focused on**
 - ▶ Their findings **are pointing to** substantial differences in reaction rates.
 - ▶ **point to**
 - ▶ The second study **is dealing with** these effects at the regional level.
 - ▶ **deal with**



Methods



- ▶ Describe steps in logical order and avoid repetition
 - ▶ Make connections between different steps
 - first, next, then, finally
 - e.g. The tissue was **first** categorised into ... **Next**, the cells were analysed ... The mutations were **then** compared to ... **Finally**, the tissue was exposed to ...
 - clear reference
 - e.g. The **first** step was to ... / **which** made it possible to ... / **This** sample was further ... / The **resulting** compound was used to ... / To identify the effect of the agent, a **second** experiment was conducted / The **final** part of the experiment involved ...



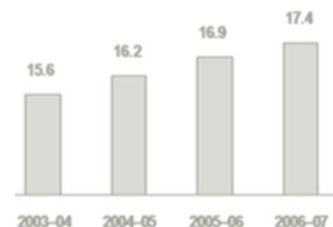
Methods

- ▶ Describe steps in logical order and avoid repetition
 - ▶ Vary sentence structure and word order
 - e.g. **sentence-initial** vs. **mid-sentence** position of link words
 - The tissue was **first** categorised into ... **Next**, the cells were analysed ... The mutations were **then** compared to ... **Finally**, the tissue was exposed to ...*
 - ▶ Do not overuse single sentences for single activities
 - e.g. **relative clauses**, **ing-forms**, **to-infinitives**
 - The first step was to ... , **which** made it possible to ... **To identify** the effect of the agent, a second experiment was conducted. The final part of the experiment involved ..., **resulting** in an increased ...*



Results

- ▶ Large amount of complex information
 - ▶ Do not list every single detail / every single number
 - Focus on the most striking results only
 - Tables, figures offer complete overview
 - ▶ First identify **general trends** and then focus on **specific details**



General ↔ specific: Improving clarity

The intervention group consisted of 15.6% of the men and 0.4% of the women, while the control group consisted of 17.4% of the women versus 2.0% of the men.

The intervention group **consisted mainly of men** (15.6% of the men and 0.4% of the women), while the control group **consisted primarily of women** (17.4% of the women versus 2.0% of the men).



Results

- ▶ Describing results / data / visuals
 - ▶ Use phrases to **direct attention** to visuals
 - e.g. *As the graph shows, ...*
 - Table 1 provides an overview of ...*
 - ▶ Establish **logical links** (e.g. contrast, similarity)
 - ▶ Use **focusing constructions** to highlight what is important
 - e.g. *What is striking is the ...*



Results: example

Seven countries showed an increase in antibiotic use of less than 4% between 1993 and 1997. Large increases were noted in Italy (34%) and Luxembourg (12%). A reduction in antibiotic use was seen in five countries: Sweden had the largest (21%) and Greece the smallest (4%). In 1997, there was a more than four-fold variation between countries in non-hospital use of antibiotics. France had the highest use, and the Netherlands, the lowest. [...]

The most remarkable finding in this analysis was the great variation in outpatient antibiotic use. The large variation is unlikely to be caused by differences in frequency of bacterial infections. The pronounced differences between Belgium and the Netherlands are noteworthy because of the close proximity of the countries and their common language. In addition to physicians' and patients' attitudes to antibiotics, historical backgrounds, cultural and social factors, and disparities in health-care systems might also be important factors in determining prescribing patterns.

general vs. specific
focusing constructions

How to write numbers

Seven countries showed an increase in antibiotic use of less than 4% between 1993 and 1997. Large increases were noted in Italy (34%) and Luxembourg (12%). A reduction in antibiotic use was seen in five countries: Sweden had the largest (21%) and Greece the smallest (4%). In 1997, there was a more than four-fold variation between countries in non-hospital use of antibiotics. France had the highest use, and the Netherlands, the lowest. [...]

The most remarkable finding in this analysis was the great variation in outpatient antibiotic use. The large variation is unlikely to be caused by differences in frequency of bacterial infections. The pronounced differences between Belgium and the Netherlands are noteworthy because of the close proximity of the countries and their common language. In addition to physicians' and patients' attitudes to antibiotics, historical backgrounds, cultural and social factors, and disparities in health-care systems might also be important factors in determining prescribing patterns.

Results

- ▶ Numbers written as **numbers**
 - ▶ **Exact** statistical results, scores, sample sizes, mathematical functions and units of measurement
e.g. multiply by 5, 10 cm long, 7.5%
 - ▶ Specific place in a **numbered series**
e.g. table 5, section 3
- ▶ Numbers written as **words**
 - ▶ Numbers **under 10** which are not exact measurements
e.g. **eight** items were discarded
 - ▶ Avoid using numbers at the **start of the sentence**
e.g. ~~75% of participants reported ...~~
→ *Seventy-five percent of participants reported ...*



Chance ↔ likely / likelihood

- ▶ Thus, women **have less chance of being** in supervisory positions.
 - > ... women **are less likely to be** in supervisory positions
- ▶ Firms that follow these strategies **have more chances of** succeeding.
 - > ... strategies **have a greater likelihood of** succeeding
- ▶ Airflow models will be used to **assess the chance of** wind damage in forests
 - > ... used to **assess the likelihood of** wind damage



Conclusions

► Use clear concluding signposts

*This analysis **clearly shows that** the present scheme is a successful numerical technique for solving the MRLW equation.*

***Thus**, the model could aid in better understanding caspase activation and identifying therapeutic approaches promoting or retarding apoptotic cell death.*



After finishing a first draft...

- Allow sufficient time to edit and revise your text
- Use checklist / ILT's Academic Writing Assistant
 - Not just superficial mistakes (grammar, vocabulary and spelling)
 - Critical look at
 - Overall structure (text-level)
 - Coherence and flow (paragraph / sentence level)
- Be reader-oriented



Editing checklist

Spelling, grammar and punctuation

- Accurate spelling (watch out for errors not detected by spell checker)
- Consistent spelling (e.g. British vs. American spelling)
- Correct use of punctuation marks, commas in particular
- Accurate grammar, correct use of basic grammatical structures
 - verb forms : tenses and subject-verb agreement (singular vs. plural)
 - articles and determiners (e.g. much / many, (a) few / (a) little)
 - adjectives / adverbs, adverb position
 - connectors (e.g. despite / although / however)
 - relative pronouns (e.g. who, which, that)
 - conditional clauses
- Longer, complex structures rather than short, isolated sentences

Vocabulary

- Correct word choice, particularly how words are combined (= collocational patterns)
→ Google phrases which sound awkward to you ("..." site:uk or Google Scholar)
- Accurate and consistent topic-specific vocabulary
- Variation in general academic phrases rather than repetition

Structure and flow

- Text structure
 - Information logically divided into paragraphs
 - Well-considered progression of ideas
- Paragraph structure
 - Related information, unifying idea (expressed in topic sentence)
 - Well-connected sentences with a clear focus
 - Use of connectors to express logical relations

} reader-friendly writing

Style

- Formal word choice rather than basic, conversational items
- Formal grammatical structures (e.g. full verb forms, indirect questions, formal linking and longer / complex sentences)
- Conciseness: efficient word choice and no unnecessary repetition
- Objective, impersonal constructions
- Use of hedging (tentative language) to avoid over-generalisation or absolute statements



Improving structure (text-level)

How to write a clear, well-structured text?

- write good paragraphs
 - not just a block of text of a particular length
 - not just a series of perfect sentences
- characteristics of a well-written paragraph:
 - Coherence (connected sentences)
 - Unity (one controlling idea)
 - Topic sentence (states paragraph's main idea; other sentences clarify, illustrate or justify)
- avoid very short or one-sentence paragraphs



Reverse outlining



▶ Useful editing strategy

- ▶ Make outline based on your text
 - ▶ Write down the topic of each paragraph
 - ▶ Clear topic sentences will be helpful
- ▶ Helps you identify potential problems
 - ▶ Is each paragraph focused and clear?
 - ▶ Is there any unnecessary information in the paragraph?
 - ▶ Are the paragraphs presented in a logical order?
 - ▶ Is every paragraph relevant to the text's main objectives?
 - ▶ Is there unnecessary overlap between paragraphs?
 - ▶ Are some paragraphs too long/short?



Paragraph unity

A paragraph logically develops one central idea:

- ▶ Only include information related to the central idea
- ▶ Start a new paragraph when the idea has been adequately developed and something new is introduced



Paragraph unity

How can you achieve paragraph unity?

- ▶ as you write keep central idea + previous sentence in mind
- ▶ strategies that can enhance unity:
 - ▶ repetition: reformulate your claim
 - ▶ exemplification: illustrate your point
 - ▶ justification, clarification: explain your ideas
 - ▶ limitation: limit your point
 - ▶ generalisation: broaden your scope
 - ▶ compare and contrast: draw parallels or distinctions
 - ▶ cause and effect: analyse your point
 - ▶ chronology: describe a process or development



Topic sentence

- ▶ **main idea** of paragraph; unifies content
- ▶ most commonly **at beginning** of paragraph
 - ↔ sometimes later in paragraph:
 - e.g. to start with sentence that links paragraph to previous one to provide convincing details before presenting the more general claim
 - ↔ in some cases, acceptable not to include topic sentence:
 - e.g. when same idea from previous paragraph is carried over and elaborated on
 - when paragraph primarily narrates a series of facts



Topic sentence: example

A post-secondary education can have very positive effects on income and employment. Numerous studies conducted in the United States over the past ten years have demonstrated that **earnings** for anyone with a **post-secondary education** are on average 20 percent higher than the earnings of those whose education stopped with a high school diploma. **Incomes** are higher still for those with **four-year degrees**, and even higher at the **master's and doctoral levels**. Regardless of the **post-secondary degree level**, graduates are 15 percent **less likely to be laid off** in difficult economic times.

Adapted from Purdue OWL



Improving structure (paragraph/sentence level)

- ▶ Improving coherence and flow
 - ▶ Strategies
 - ▶ Reference (pronouns)
 - ▶ Linking (link words, relative clauses)
 - ▶ Given-new / light-heavy principle
 - ▶ Conciseness (avoiding redundancy)



Reference

Pro-forms: refer back to word / idea

→ create very strong links between sentences

- ▶ Pronouns

- ▶ *This / these / such* + summary word

e.g. *This hypothesis, suggestion, argument, ...*

These views, trends ...

Such an approach, such evidence

The explanation given above ...

The controversy outlined in the first section of this paper...

- ▶ Avoid ambiguous reference

- ▶ Do not start a paper by referring back to the title

e.g. *This issue is currently the subject of much debate.*



Linking

Link words: make logical links between sentences explicit

- ▶ Various link words to express the same logical relations

- ▶ Different grammatical usage!

- ▶ Preposition / prepositional phrase → followed by noun (phrase)

e.g. *despite, in spite of, due to, because of, in addition to*

- ▶ Conjunction → combination of two clauses to form one sentence

e.g. *although, while, whereas, but, because, as, since, so, if, unless*

- ▶ Adverb → two separate sentences

→ only creates logical link, not a grammatical link

e.g. *however, nevertheless, therefore, as a result, furthermore, moreover*

→ For more examples and usage rules, consult slides with common language errors



Given-new principle

- ▶ Start with information already known to the reader
 - ▶ To create a link with the previous sentence
 - ▶ Place new information towards the end of the sentence
 - ▶ Part of the sentence that has most emphasis
- = Optimal information distribution in the sentence
- ▶ New information is related to what is already known
 - facilitates information processing and improves transparency



Given-new principle

- e.g. *Many studies have examined religious involvement and health. The majority of these have found that religious people are physically healthier and require fewer health services.*
- information that is easily recoverable from the previous context
- Electronics are no longer built to last. Mobile phones, for instance, are discarded after only a couple years.*
- information that is associated with a concept that has already been introduced



Given-new principle: examples

Compare the two paragraphs. Which is easier to read and understand?

The main threat to the environment is the country's rapid industrial expansion. Unprecedented levels of pollution and damage to the fragile ecosystem result from this. The economic aspects, however, seem to eclipse these concerns.

The main threat to the environment is the country's rapid industrial expansion. This has led to unprecedented levels of pollution and damage to the fragile ecosystem. These concerns, however, seem to be eclipsed by the economic aspects.

Version 1: disconnected sentences, top-heavy sentences, poor flow and readability

Version 2: new information in focus position, clear link to previous context, more reader-friendly

Given-new principle: examples

Why is the same information presented in a different order in each paragraph?

In modern capitalist societies governments tend to earn considerably less income from taxes than what they need to cover their costs. This general tendency for government revenues to rise more slowly than government spending is discussed by O'Connor (1973). He offers two main explanations for ...

James O'Connor's (1973) framework offers a valuable insight into the financial imbalances plaguing most Western governments these days. O'Connor discusses the general tendency for government revenues to rise more slowly than government spending. This phenomenon can be explained by ...

Given-new principle: examples

Different information structure creates confusion
 → given information in focus position is understood as new

In modern capitalist societies governments tend to earn considerably less income from taxes than what they need to cover their costs. O'Connor discusses the general tendency for government revenues to rise more slowly than government spending. He offers two main explanations for ...

James O'Connor's (1973) framework offers a valuable insight into the financial imbalances plaguing most Western governments these days. This general tendency for government revenues to rise more slowly than government spending is discussed by O'Connor (1973). This phenomenon can be explained by ...



Light-heavy principle

- ▶ In line with given-new principle
 - ▶ Place shorter constituents towards the beginning of the sentence
 - ▶ To avoid top-heaviness
 - ▶ Place longer, more complex elements in final position
 - ▶ To avoid a weak ending
- makes it easier to process the message
-



Light-heavy principle: examples

The influence of different taxation systems on the distribution policy of international corporations is investigated.

Advertising spyware that is installed without the user's knowledge and which logs information about the user, including passwords, email addresses, and web browsing history constitutes a problem, however.

- Top-heavy sentences
→ difficult to read (too many words before the main verb)
 - Weak ending
→ rhetorical impact lost
-

Conciseness

- ▶ Text / paragraph level
 - ▶ Content
 - ▶ Selection of information: avoid repetition / too many details
- ▶ Sentence level
 - ▶ Language
 - ▶ Avoid redundancy: using more words than necessary
 - Sentence structure
 - Word choice



Conciseness

- ▶ Word choice
 - ▶ Repetition and redundancy
 - ▶ Tautology, needless words, wordy phrases
e.g. *at this point in time (= now), despite the fact that (= although)*
 - ▶ Inefficient word choice
 - ▶ Accurate topic-specific terminology vs. longer descriptions
e.g. *seeds from which the outer layer has been removed*
 → *hulled seeds*
 the number of people who actually go out and vote
 → *voter turnout*
 - ▶ Very formal constructions for no reason
e.g. *a plethora of*
 - ▶ Unnecessary meta-language
e.g. *in my opinion, as already mentioned*
-

Conciseness

- ▶ Sentence structure
 - ▶ Unnecessary subclauses
 - e.g. **There are** some researchers **who** claim...
 → *Some researchers claim ...*
 - When there is** a higher concentration of hormones, **this**
 results in ...
 → *A higher concentration of hormones results in ...*
 - It is** a significant advancement in this field **that** ...
 → *A significant advancement in this field is ...*
 - Doctors should be careful **that they do not** overload patients
 with information.
 → *Doctors should be careful not to overload ...*
-

Conciseness

- ▶ Sentence structure
 - ▶ Linking clauses rather than repeating words
 - ▶ (reduced) relatives
 - ▶ participle clauses
 - e.g. *After a brief rise in temperature, the snow will either continue to melt or it will refreeze. This melting or freezing strongly affects vegetation patterns.*
 → *which strongly affects ... / strongly affecting ...*



Conciseness

- ▶ Sentence structure
 - ▶ Overuse of prepositions
 - ▶ Often more natural in English to place words **before** the head noun (complex noun phrases)
 → Noun groups / adjectives / possessives
 - ▶ Constructions with prepositions which **follow** the head noun tend to be overused by Dutch speakers
 - e.g. *policies **for** the environment **in** Europe*
 → *European environmental policies*
 - seeds **of** sunflowers **with** high nutrients*
 → *high-nutrient sunflower seeds*
 - recent technologies **with** low costs*
 → *recent low-cost technologies*



Conciseness

► Sentence structure

► Unnecessary pronouns and reference

- e.g. *When teachers give instructions, they often **do this** by presenting the students a set of prescribed steps.*
 → *When teachers give instructions, they often present a set of ...*
 *This study evaluates the effects of a drug education programme on the students involved **in it**.*
 → *... on the students involved.*
 *The next step will be to examine how these two factors can be related **to each other**.*
 → *... can be related.*
-
-

Conciseness

► Verbs vs nouns

- Noun phrase → verb phrase
 - action verbs vs. noun + dummy verb
 - e.g. ***an analysis** of voter turnout **was conducted***
 → voter turnout **was analysed**
 - Verb phrase → noun phrase
 - fewer words, more specific focus
 - e.g. *studies **how this technique was adopted***
 → studies the **adoption** of this technique
 *to compare **how researchers collected their data** in different studies*
 → to compare **data collection** in different studies
-
-

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